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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/925,768	06/24/2013	Warren Roach	6982-2-CON

CONFIRMATION NO. 1803

POWER OF ATTORNEY NOTICE

104600
ASPIRE IP, LLC
14 N. Sierra Madre Street
Suite A
Colorado Springs, CO 80903

OC000000126583542

Date Mailed: 06/29/2021

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/22/2021.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/qtran/

DROPBOX, INC., ET AL.
EXHIBIT 1002

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P.O. Box 1450
Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/925,768	06/24/2013	Warren Roach	6982-2-CON

CONFIRMATION NO. 1803

POA ACCEPTANCE LETTER

26381
IP AUTHORITY, LLC
Ramraj Soundararajan
9435 Lorton Market St, #801
Lorton, VA 22079

OC000000126583568

Date Mailed: 06/29/2021

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/22/2021.

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.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/qtran/

PTO/AIA/81A (02-15)
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PATENT - POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Patent Number	9218348 B2
Issue Date	12-22-2015
First Named Inventor	Warren Roach
Title	Automatic Real-Time File Management Method and Apparatus
Attorney Docket No.	6982-2-CON

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith: 26381

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified patent to:

☒ The address associated with the above-identified Customer Number.

OR

☐ The address associated with the Customer Number identified in the box at right:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the:

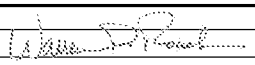
☒ Applicant.

OR

☐ Patent owner.

Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on _____.

SIGNATURE of Applicant or Patent Owner

Signature		Date	June 7, 2021
Name	Warren Roach	Telephone	719-579-9734
Title and Company	Partner Datanet LLC		

NOTE: Signatures of all the applicants or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

☐ A total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 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: 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.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	43054961
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Ramraj Soundararajan/Brandi Franklin
Filer Authorized By:	Ramraj Soundararajan
Attorney Docket Number:	6982-2-CON
Receipt Date:	22-JUN-2021
Filing Date:	24-JUN-2013
Time Stamp:	15:08:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	US9218348_POA2.pdf	139677 35ff413a995944792ff9dd27e56ed07b3b777078	no	2

Warnings:

Information:	
Total Files Size (in bytes):	139677

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

New Applications Under 35 U.S.C. 111

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

National Stage of an International Application under 35 U.S.C. 371

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/925,768	06/24/2013	Warren Roach	6982-2-CON

CONFIRMATION NO. 1803

IMPROPER CPOA LETTER

104600
ASPIRE IP, LLC
14 N. Sierra Madre Street
Suite A
Colorado Springs, CO 80903

OC000000126292008

Date Mailed: 06/16/2021

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 06/09/2021. The power of attorney in this application is not accepted for the reason(s) listed below:

- The revocation is not signed by the applicant, the assignee of the entire interest, or one particular principal attorney having the authority to revoke.

/ylueng/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

26381
IP AUTHORITY, LLC
Ramraj Soundararajan
9435 Lorton Market St, #801
Lorton, VA 22079
UNITED STATES

PTO/AIA/81A (02-15)
Approved for use through 03/31/2021. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT - POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

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Issue Date	12-22-2015
First Named Inventor	Warren Roach
Title	Automatic Real-Time File Management Method and Apparatus
Attorney Docket No.	6982-2-CON

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OR

☐ The address associated with the Customer Number identified in the box at right:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the:

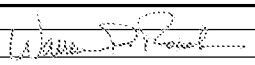
☐ Applicant.

OR

☒ Patent owner.

Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on _____.

SIGNATURE of Applicant or Patent Owner

Signature		Date	June 7, 2021
Name	Warren Roach	Telephone	719-579-9734
Title and Company	Partner Datanet LLC		

NOTE: Signatures of all the applicants or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/AIA/96 (08-12)
Approved for use through 11/30/2020. 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(c)

Applicant/Patent Owner: Warren Roach, Steven Williams, Troy Reiber, Steven Burdine

Application No./Patent No.: 9218348 Filed/Issue Date: 12--22-2015

Titled: Automatic Real-Time File Management Method and Apparatus

Datanet, LLC, a corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

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 _____, Frame _____, or for which a copy thereof is attached.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Inventors To: Integrity PC Innovations, Inc.

   The document was recorded in the United States Patent and Trademark Office at
   Reel 033638, Frame 0652, or for which a copy thereof is attached.

2. From: Integrity PC Innovations, Inc. To: Datanet, LLC

   The document was recorded in the United States Patent and Trademark Office at
   Reel 046937, Frame 0197, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). 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: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**.

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PTO/AIA/96 (08-12)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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STATEMENT UNDER 37 CFR 3.73(c)

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.

4. 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.

5. 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.

6. 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(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment 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.

/Ramraj Soundararajan/	5/06/2021
Signature	Date
RAMRAJ SOUNDARARAJAN	53832
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

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Electronic Acknowledgement Receipt

EFS ID:	42937471
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Ramraj Soundararajan/Brandi Franklin
Filer Authorized By:	Ramraj Soundararajan
Attorney Docket Number:	6982-2-CON
Receipt Date:	09-JUN-2021
Filing Date:	24-JUN-2013
Time Stamp:	11:07:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	US9218348_POA.pdf	138515 f4fe9c080cca3e5209884f1955daf371d9ff38bf	no	2

Warnings:

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	348_Statement_373c_AIA96.pdf	117962 00f4f7579e10dcf2b01410f5cdbaacf0b8f96771	no	3
Warnings:					
Information:					
			Total Files Size (in bytes):	256477	

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

New Applications Under 35 U.S.C. 111

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

National Stage of an International Application under 35 U.S.C. 371

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/925,768	12/22/2015	9218348	6982-2-CON	1803

104600 7590 12/02/2015

ASPIRE IP
444 East Pikes Peak Avenue
Suite 105
Colorado Springs, CO 80903

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

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

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

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

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

INTEGRITY PC INNOVATIONS, INC., Colorado Springs, CO;
Warren Roach, Colorado Springs, CO;
Steven R. Williams, Colorado Springs, CO;
Troy J. Reiber, Colorado Springs, CO;
Steven C. Burdine, Greenwood Village, CO;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

PART B - FEE(S) TRANSMITTAL

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

104860 7890 08/14/2015
ASPIRE IP
444 East Pikes Peak Avenue
Suite 105
Colorado Springs, CO 80903

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

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

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/925,768	06/24/2013	Warren Roach	6982-2-CON	1803

TITLE OF INVENTION: AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	11/16/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
TO, BAOQUOC N	2154	707-707000

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 Aspire IP
2 Scott J. Hawranek
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 credits any overpayment, to Deposit Account Number 50-6481 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☐ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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

Authorized Signature /s/Scott Hawranek/ Date November 16, 2015
Typed or printed name Scott J. Hawranek Registration No. 52,411

Electronic Patent Application Fee Transmittal

Application Number:	13925768
Filing Date:	24-Jun-2013
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Filer:	Scott Joseph Hawranek/Sherri Weisbeck-Raslich
Attorney Docket Number:	6982-2-CON

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

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	2501	1	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**480**

Electronic Acknowledgement Receipt

EFS ID:	24095654
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Scott Joseph Hawranek/Sherri Weisbeck-Raslich
Filer Authorized By:	Scott Joseph Hawranek
Attorney Docket Number:	6982-2-CON
Receipt Date:	16-NOV-2015
Filing Date:	24-JUN-2013
Time Stamp:	16:28:48
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$480
RAM confirmation Number	3428
Deposit Account	506481
Authorized User	HAWRANEK, SCOTT J

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

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

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

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

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

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Post Allowance Communication - Incoming	2015_11_16_Response_to_Reasons_for_Allowance.pdf	94118 66159825d738df456d18b5ab7402d32876c906b6	no	2
Warnings:					
Information:					
2	Issue Fee Payment (PTO-85B)	2015_11_16_Issue_Fee_Transmittal.pdf	295185 517df80db691a151ed4d513c729f1dbf8668caac	no	1
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30793 5bc19ff38e454ca19e73b155c224d6fbb1b01b9e	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	420096		

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

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

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: ROACH et al. Serial No. 13/925,768 Filed: June 24, 2013 Attorney File No. 6982-2-CON Entitled: "AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS"	Group Art Unit: 2154 Confirmation No.: 1803 Examiner: TO, BAOQUOC N Customer No.: **104600** ***Submitted via EFS-Web***

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

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE AND INTERVIEW SUMMARY

Dear Sir/Madam:

The Notice of Allowance of August 14, 2015, has been received and its contents carefully noted. Applicant appreciates the indication that claims 63-79, 81 and 83-93 are allowed.

Comments on Statement of Reasons for Allowance

In the Notice of Allowance, the Examiner provided the following reasons for allowance:

> As to claims 63, 83-86 and 93, the reason for allowance is similar to the reason for allowance in the parent case and applicant's argument in the interview dated on 07/02/2015. Furthermore, no additional reference(s) either alone or in combination discloses or teach the [sic] as claimed in claims 63, 83-86 and 93.

While Applicant believes claims 63-79, 81 and 83-93 are allowable, Applicant does not necessarily agree with the Office's reasons for allowance. In particular, it is clear from the following passage of the MPEP § 1302.14, that the Examiner is not required to identify ***all*** reasons for allowance.

> The statement [of reasons for allowance] is not intended to necessarily state all the reasons for allowance or all the details why claims are allowed and should not be

> written to specifically or impliedly state that all the reasons for allowance are set forth. Where the examiner has a large number of reasons for allowing a claim, it may suffice to state only the major or important reasons, being careful to so couch the statement.

Also, the reasons for allowance are only warranted in instances in which "the record of the prosecution as a whole does not make clear his or her reasons for allowing a claim or claims."

In the present case, Applicant believes the record as a whole does make the reasons for allowance clear and therefore no statement by the Examiner is necessary or warranted. Also, the Examiner has not necessarily stated all the reasons for allowance. Furthermore, the Applicant does not necessarily agree with each statement in the reasons for allowance.

Interview Summary

An Applicant-Initiated Interview was conducted on July 2, 2015. During the interview, the rejection under 35 U.S.C. § 103 in the Office Action dated March 12, 2015 was discussed.

Subsequently, the Examiner contacted Applicant regarding possible subject matter patentability issues under 35 U.S.C. § 101. Applicant submitted that Claim 63 included at least the limitation "(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating file" and is therefore patentable.

No fee is believed due for this submittal. However, if a fee is deemed necessary, please contact undersigned.

Respectfully submitted,

ASPIRE IP

By: /s/Scott Hawranek/

Scott J. Hawranek
Registration No. 52,411
444 East Pikes Peak Parkway, Suite 105
Colorado Springs, Colorado 80903
(719) 344-9907

Date: November 16, 2015

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/925,768	06/24/2013	Warren Roach	6982-2-CON	1803

104600 7590 09/23/2015

ASPIRE IP
444 East Pikes Peak Avenue
Suite 105
Colorado Springs, CO 80903

EXAMINER
TO, BAOQUOC N

ART UNIT	PAPER NUMBER
2154	

NOTIFICATION DATE	DELIVERY MODE
09/23/2015	ELECTRONIC

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

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

scott@aspireip.com
USPTOMAIL@aspireip.com
alixandria@aspireip.com

Corrected Notice of Allowability	Application No. 13/925,768	Applicant(s) ROACH ET AL.	
	Examiner BAOQUOC TO	Art Unit 2154	AIA (First Inventor to File) Status No

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

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

1. ☒ This communication is responsive to *04/30/2015*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *63, 65-79, 81 and 83-96*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

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

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 10/30/2013
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

DETAILED ACTION

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

This Corrected Notice of allowability to correct the number of allow claim in PTOL-37.

1. In response to the Office Action dated on 04/27/2015, applicant(s) amend the application as follow:

Claims amended: 1

Claims canceled: 1-62, 64, 80 and 82

Claims newly added: 83-96

Claims pending: 63, 65-79, 81 and 83-96

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 10/30/2013. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

3. The amendment filed on 04/30/2015 overcame the Obvious Double Patenting rejection.

Allowable Subject Matter

4. Claims 63, 65-79, 81 and 83-96 are allowed.

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

As to claims 63, 83-86 and 93, the reason for allowance is similar to the reason for allowance in the parent case and applicant's argument in the interview dated on 07/02/2015. Furthermore, no additional reference(s) either alone or in combination disclose or teach the claimed language in claims 63, 83-86 and 93.

Dependent claims 65-79, 81, 87-92 and 94-96 are allowed under the same reason as to claims 63, 83-86 and 93.

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."

Conclusion

5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 571-272-4041. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BAOQUOC N TO/
Primary Examiner, Art Unit 2162

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	32	US-5276867-$.DID. OR US-5608865-$.DID. OR US-5638059-$.DID. OR US-5638509-$.DID. OR US-5668991-$.DID. OR US-5751997-$.DID. OR US-5765173-$.DID. OR US-5978815-$.DID. OR US-6023710-$.DID. OR US-6047294-$.DID. OR US-6101507-$.DID. OR US-6460055-$.DID. OR US-6535894-$.DID. OR US-6629109-$.DID. OR US-7117371-$.DID. OR US-8473478-$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/11 14:44
L2	1	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1))) and 1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/09/11 14:45

EAST Search History (Interference)

< This search history is empty>

9/ 11/ 2015 2:45:45 PM
C:\ Users\ bto\ Documents\ EAST\ Workspaces\ 13925768.wsp

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/925,768
				Filing Date	June 24, 2013
				First Named Inventor	Warren Roach
(Use as many sheets as necessary)				Art Unit	2162
				Examiner Name	TO, Baoquoc N.
Sheet	1	of	1	Attorney Docket Number	6982-2-CON

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	5276867	01/04/1994	Kenley et al.	
	2	5608865	03/04/1997	Midgley et al.	
	3	5638059	06/10/1997	Pilkington	
	4	5638509	06/10/1997	Dunphy et al.	
	5	5668991	09/16/1997	Dunn et al.	
	6	5751997	05/12/1998	Kullcik et al.	
	7	5765173	06/09/1998	Cane et al.	
	8	5978815	11/02/1999	Cabrera et al.	
	9	6023710	02/08/2000	Steiner et al.	
	10	6047294	04/04/2000	Deshayes et al.	
	11	6101507	08/08/2000	Cane et al.	
	12	6460055	10/01/2002	Midgley et al.	
	13	6535894	03/18/2003	Schmidt et al.	
	14	6629109	09/30/2003	Koshisaka	
	15	7117371	10/03/2006	Parthasarathy et al.	
	16	8473478	06/25/2013	Roach et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

Examiner Signature	/Baoquoc To/	Date Considered	09/11/2015

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.T./

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	**Art Unit**
	BAOQUOC TO	2154

CPC						
Symbol					**Type**	**Version**
G06F		17	/	30073	F	2013-01-01
G06F		17	/	30067	I	2013-01-01
G06F		11	/	1461	I	2013-01-01
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CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
			/					
			/					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	31	
/BAOQUOC TO/ Primary Examiner.Art Unit 2154	09/11/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	**Art Unit**
	BAOQUOC TO	2154

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION	
CLASS	SUBCLASS	CLAIMED	NON-CLAIMED
707	654	G 0 6 F 17 / 30 (2006.01.01)	

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	31	
/BAOQUOC TO/ Primary Examiner.Art Unit 2154	09/11/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	**Art Unit**
	BAOQUOC TO	2154

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		17		33		49	16	65	31	81				
	2		18		34		50	17	66		82				
	3		19		35		51	18	67	14	83				
	4		20		36		52	19	68	13	84				
	5		21		37		53	20	69	12	85				
	6		22		38		54	22	70	1	86				
	7		23		39		55	21	71	2	87				
	8		24		40		56	23	72	3	88				
	9		25		41		57	24	73	4	89				
	10		26		42		58	25	74	5	90				
	11		27		43		59	26	75	6	91				
	12		28		44		60	27	76	7	92				
	13		29		45		61	28	77	8	93				
	14		30		46		62	29	78	9	94				
	15		31		47	15	63	30	79	10	95				
	16		32		48		64		80	11	96				

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 31	
/BAOQUOC TO/ Primary Examiner.Art Unit 2154 (Primary Examiner)	09/11/2015 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 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

NOTICE OF ALLOWANCE AND FEE(S) DUE

104600 7590 08/14/2015

ASPIRE IP
444 East Pikes Peak Avenue
Suite 105
Colorado Springs, CO 80903

EXAMINER
TO, BAOQUOC N

ART UNIT	PAPER NUMBER
2154	

DATE MAILED: 08/14/2015

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/925,768	06/24/2013	Warren Roach	6982-2-CON	1803

TITLE OF INVENTION: AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	11/16/2015

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

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

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

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

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

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

PART B - FEE(S) TRANSMITTAL

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

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

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

104600 7590 08/14/2015

ASPIRE IP
444 East Pikes Peak Avenue
Suite 105
Colorado Springs, CO 80903

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

Certificate of Mailing or Transmission

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

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/925,768	06/24/2013	Warren Roach	6982-2-CON	1803

TITLE OF INVENTION: AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	11/16/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
TO, BAOQUOC N	2154	707-707000

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 credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

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

❑ Applicant certifying micro entity status. See 37 CFR 1.29

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

❑ Applicant asserting small entity status. See 37 CFR 1.27

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

❑ Applicant changing to regular undiscounted fee status.

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

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

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/925,768	06/24/2013	Warren Roach	6982-2-CON	1803

104600 7590 08/14/2015

ASPIRE IP
444 East Pikes Peak Avenue
Suite 105
Colorado Springs, CO 80903

EXAMINER	
TO, BAOQUOC N	

ART UNIT	PAPER NUMBER
2154	

DATE MAILED: 08/14/2015

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

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	13/925,768	ROACH ET AL.	
	Examiner	Art Unit	
	BAOQUOC TO	2154	

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

(1) *BAOQUOC TO*.

(2) *Ramraj Soundaranrajan, Reg. No.* .

(3) *Roach Warren*.

(4) *Yiu F. Au, Reg. No. 67,529*.

Date of Interview: *02 July 2015*.

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

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

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

Claim(s) discussed: *1*.

Identification of prior art discussed: _____.

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

Examiner, Ram and Yiu discusses claim amendment and newly added claims similarity between the parent application which was patent and instant claim. The currently the current claims limitations of claims are mirrored to the parent application. Applicant argues that the claimed subject matter in the child application contained almost the same subject matter and the same reason for allowance should also be applied. Examiner explained since child application contained slightly different in the claims language. Therefore claims are required to search and consideration. Later on, Examiner also contact applicant's regarding to the 101 issues, applicant argues that the claim include resident program in a computing device and perform the operation. Therefore, the claims subject matter is not abstract ideas .

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

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

☐ Attachment

/BAOQUOC TO/ Primary Examiner, Art Unit 2154	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Notice of Allowability	Application No. 13/925,768	Applicant(s) ROACH ET AL.	
	Examiner BAOQUOC TO	Art Unit 2154	AIA (First Inventor to File) Status No

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

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

1. ☒ This communication is responsive to *04/30/2015*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *63-79,81 and 83-93*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

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

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 04/30/2015
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☒ Interview Summary (PTO-413), Paper No./Mail Date *07/02/2015* .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

DETAILED ACTION

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

1. In response to the Office Action dated on

Claims amended: 1

Claims canceled: 1-62, 64, 80 and 82

Claims newly added: 83-96

Claims pending: 63-82

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 04/30/2015. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

3. The amendment filed on 04/30/2015 overcame the Obvious Double Patenting rejection.

Allowable Subject Matter

4. Claims 63-79, 81 and 83-93 are allowed.

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

As to claims 63, 83-86 and 93, the reason for allowance is similar to the reason for allowance in the parent case and applicant's argument in the interview dated on 07/02/2015. Furthermore, no additional reference(s) either alone or in combination discloses or teach the as claimed in claims 63, 83-86 and 93.

Dependent claims 65-79, 81, 87-92 and 94-95 are allowed under the same reason as to claims 63, 83-86 and 93.

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."

Conclusion

5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 571-272-4041. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BAOQUOC N TO/
Primary Examiner, Art Unit 2162

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	13/925,768	ROACH ET AL.	
	Examiner	Art Unit	
	BAOQUOC TO	2154	

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

(1) *BAOQUOC TO*.

(3) *Roach Warren*.

(2) *Ramraj Soundaranrajan, Reg. No.* .

(4) *Yiu F. Au, Reg. No. 67,529*.

Date of Interview: *02 July 2015*.

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

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

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

Claim(s) discussed: *1*.

Identification of prior art discussed: _____.

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

Examiner, Ram and Yiu discusses claim amendment and newly added claims similarity between the parent application which was patent and instant claim. The currently the current claims limitations of claims are mirrored to the parent application. Applicant argues that the claimed subject matter in the child application contained almost the same subject matter and the same reason for allowance should also be applied. Examiner explained since child application contained slightly different in the claims language. Therefore claims are required to search and consideration. Later on, Examiner also contact applicant's regarding to the 101 issues, applicant argues that the claim include resident program in a computing device and perform the operation. Therefore, the claims subject matter is not abstract ideas .

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

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

☐ Attachment

/BAOQUOC TO/ Primary Examiner, Art Unit 2154	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	228	(archiv$3 with timer$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:35
L2	44	1 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/08/06 17:35
L3	10	(archiv$3 with timer$1 with second$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:36
L4	1	3 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/08/06 17:36
L5	2175	((archiv$3 or transfer$3) with timer$1 with (second$3 or permanent$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:37
L6	1	((archiv$3 or transfer$3) with (archive near2 file) with timer$1 with (second$3 or permanent$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:42
L7	2	((archiv$3 or transfer$3) with ((archiv$3 or captur$3 or snapshot) near2 file$1) with timer$1 with (second$3 or permanent$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:43
L8	121	((archiv$3 or transfer$3) with ((archiv$3 or	US-PGPUB;	OR	ON	2015/08/06

		captur$3 or snapshot) near2 file$1)) and ((identif$6 or determin$5) with exist$3 with ((archiv$3 or captur$3 or snapshot) near2 file$1))	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			17:44
L9	13	((archiv$3 or transfer$3) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and ((identif$6 or determin$5) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) same ((transfer$4 or mov$3 or transmi$4) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:46
L10	12	((archiv$3 or transfer$3) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) same ((identif$6 or determin$5) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) same ((transfer$4 or mov$3 or transmi$4) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:46
L11	1	10 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/08/06 17:46
L12	10	((archiv$3 or transfer$3) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and ((identif$6 or determin$5) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:49
L13	1	12 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/08/06 17:49
L14	11	((archiv$3 or transfer$3) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and ((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:51
L15	1	14 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR;	OR	OFF	2015/08/06 17:51

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
L16	15	((archiv$3 or stor$3 or cach$3) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and ((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:52
L17	1	16 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/08/06 17:52
L18	15	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:55
L19	0	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1) with (cahe or temporary)) and((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:56
L20	15	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 17:56
L21	1	20 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/08/06 17:57
L22	431	(message ner2 timer$1) same ((transfer$4 or mov$3 or transmi$4 or (back$3 near2	US-PGPUB; USPAT;	OR	ON	2015/08/06 17:58

		up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
L23	26	22 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/08/06 17:59
L24	0	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1) with buffer$1) and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 18:09
L25	0	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence or present$1) with ((archiv$3 or captur$3 or snapshot) near2 file$1) with buffer$1) and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 18:12
L26	2	"6629109".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 18:13
L27	0	26 and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 18:14
L28	3	"8773478".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 18:15
L29	2	"8473478".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/06 18:15

EAST Search History (Interference)

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	0	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1) with (cache or temporary or buffer)) and((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1 or (output$3 near2 buffer))))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/08 17:25
L4	0	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1) with (cache or temporary or buffer)) and((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1 or (output$3 near2 buffer)))) and ((monitor$3 or detect$4) with ((chang$3 or modif$7 or delet$4 or write or updat$3 or synchroniz$5) near2 file$1)) and ((captur$3 or (back$3 near2 up)) with (proxim$5 or before or after or prior) with ((chang$3 or modif$7 or delet$4) near2 file$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/08 17:27
L5	0	(((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1) with (cache or temporary or buffer)) and((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1 or (output$3 near2 buffer)))) and ((monitor$3 or detect$4) with ((chang$3 or modif$7 or delet$4 or write or updat$3 or synchroniz$5) near2 file$1)) and ((captur$3 or (back$3 near2 up)) with (proxim$5 or before or after or prior) with ((chang$3 or modif$7 or delet$4) near2 file$1))).ti,clm,ab.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/08 17:29
L6	0	(((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1) with (cache or temporary or buffer)) and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2015/08/08 17:32

		captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1 or (output$3 near2 buffer)))) and ((monitor$3 or detect$4) with ((chang$3 or modif$7 or delet$4 or write or updat$3 or synchroniz$5) near2 file$1)) and ((captur$3 or (back$3 near2 up)) with (proxim$5 or before or after or prior) with ((chang$3 or modif$7 or delet$4) near2 file$1)) and ((event$1 or time$1 or timer$1 or message$1) with different with (captur$3 or snapshot or backup or (back$3 near2 up))) same (transfer$4 or mov$3 or transmi$4 or (back$3 near2 up))).ti,clm,ab.	IBM_TDB			
L8	15	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/08 17:35
L9	15	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1)))	US-PGPUB; USPAT	OR	ON	2015/08/08 17:36
L10	0	9 AND ((G06F17/30073 OR G06F11/1461 OR G06F2201/84).CPC. AND (707/640 OR 707/649 OR 707/661).CCLS. AND (G06F17/30).IPCR.)	US-PGPUB; USPAT	OR	ON	2015/08/08 17:38

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L7	0	(((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1) with (cache or temporary or buffer)) and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1 or (output$3 near2 buffer)))) and ((monitor$3 or detect$4) with ((chang$3 or modif$7 or delet$4 or write or updat$3 or synchroniz$5) near2 file$1)) and ((captur$3 or (back$3 near2 up)) with (proxim$5 or before or after or prior) with ((chang$3 or modif$7 or delet$4) near2 file$1)) and ((event$1 or time$1	USPAT; UPAD	OR	ON	2015/08/08 17:32

		or timer$1 or message$1) with different with (captur$3 or snapshot or backup or (back$3 near2 up))) same (transfer$4 or mov$3 or transmi$4 or (back$3 near2 up))).ti,clm,ab.				

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	40	US-5524190-$.DID. OR US-5649196-$.DID. OR US-5813017-$.DID. OR US-6134660-$.DID. OR US-6212512-$.DID. OR US-6269431-$.DID. OR US-6317845-$.DID. OR US-6332200-$.DID. OR US-6353878-$.DID. OR US-6366988-$.DID. OR US-6434681-$.DID. OR US-6496944-$.DID. OR US-6564215-$.DID. OR US-6571280-$.DID. OR US-6611850-$.DID. OR US-6615225-$.DID. OR US-6802025-$.DID. OR US-6847984-$.DID. OR US-1259912-$.DID. OR US-1331018-$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/08/08 23:44
L4	15	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1))) and "1"	US-PGPUB; USPAT	OR	ON	2015/08/08 23:44
L5	15	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1))) and "1"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/08 23:44
L6	0	((identif$6 or determin$5 or check$3 or validat$4) with (exist$3 or presence) with ((archiv$3 or captur$3 or snapshot) near2 file$1)) and ((transfer$4 or mov$3 or transmi$4 or (back$3 near2 up)) with (archiv$3 or captur$3 or snapshot or backup or (back$3 near2 up)) with (second$3 near2 (storage$1 or location$1 or volume$1 or memory or tape or storage or device$1))) and 3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/08 23:45
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CONFIRMATION NO. 1803

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
13/925,768	06/24/2013 RULE	707	2154	6982-2-CON

APPLICANTS

INTEGRITY PC INNOVATIONS, INC., Colorado Springs, CO;

INVENTORS

Warren Roach, Colorado Springs, CO;
Steven R. Williams, Colorado Springs, CO;
Troy J. Reiber, Colorado Springs, CO;
Steven C. Burdine, Greenwood Village, CO;

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

This application is a CON of 09/957,459 09/21/2001 PAT 8473478
which claims benefit of 60/234,221 09/21/2000

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

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Foreign Priority claimed	35 USC 119(a-d) conditions met	Verified and Acknowledged	Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
☐ Yes ☑ No	☐ Yes ☑ No	/BAOQUOC N TO/ Examiner's Signature	☐ bto Initials	CO	6	20	2

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UNITED STATES

TITLE

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G06F		17	/	30073	F	2013-01-01
G06F		17	/	30067	I	2013-01-01
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707	672	8/10/2014	Bto
707	672	3/7/2015	Bto

SEARCH NOTES		
Search Notes	Date	Examiner
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W. W. Bach
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3 Human Exploration Framework Team: Strategy and status
Brian Muirhead, Brent Sherwood, John Olson
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Human Exploration Framework Team (HEFT) was formulated to create a decision framework for human space exploration that drives out the knowledge, capabilities and infrastructure NASA needs to send people to explore multiple destinations in the Solar System ...

4 Integration, the VLSI Journal: Volume 1 Issue 4
L. Spaanenburg
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Publisher: Elsevier Science Publishers B. V.
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5 A Proof System for Type Theory and CCS
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6 Heavy-lift contributions to a human mission to Mars
Tim Monk, Jon Holladay, John Jaap, Keitha Saggett, Robin Pinson, Ian Dux, Jason Hopkins, Chad Brown
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7 Detection and validation of the body edge in low count emission tomography images
Leighton R. Barnden, John Dickson, Brian F. Hutton
December 2006 **Computer Methods and Programs in Biomedicine** , Volume 84 Issue 2-3
Publisher: Elsevier North-Holland, Inc.
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Keywords: Body edge, OSEM, PET, Projection edge, SPECT

8 Machine learning of heuristics
Donald Arthur Waterman
January 1969 Machine learning of heuristics
Publisher: Stanford University
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9 Correction to 'Diffuse' Rate 1/2 Threshold Decodable Convolutional Codes'
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J.A. Belward
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Publisher: Elsevier Science Publishers B. V.
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11 On the Effective Jordan Decomposability
Xizhong Zheng, Robert Rettinger, Burchard von Braunmühl
February 2003 **STACS '03:** Proceedings of the 20th Annual Symposium on Theoretical Aspects of Computer Science
Publisher: Springer-Verlag
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13 A Ticking Clock: Performance Analysis of a Circadian Rhythm with Stochastic Process Algebra
Jeremy T. Bradley

August 2008 **EPEW '08:** Proceedings of the 5th European Performance Engineering Workshop on Computer Performance Engineering

Publisher: Springer-Verlag

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We apply performance analysis techniques to a biological modelling problem, that of capturing and reproducing the Circadian rhythm. A Circadian rhythm provides cells with a clock by which to regulate their behaviour. We consider two distinct stochastic ...

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15 A new strategy for urinary sediment segmentation based on wavelet, morphology and combination method
Yong-Ming Li, Xiao-Ping Zeng

December 2006 **Computer Methods and Programs in Biomedicine** , Volume 84 Issue 2-3

Publisher: Elsevier North-Holland, Inc.

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This paper presents a strategy for segmenting urinary sediment based on wavelet, morphology and combination method. Firstly, the wavelet transforms and morphology are used to get rid of the effect of the defocusing and get the subimages that include ...

Keywords: Combination method, Morphology, Urinary sediment, Wavelet transform

16 A truncated enumeration algorithm for the fixed charge problem
Charles Bassoura Drebes

January 1969 A truncated enumeration algorithm for the fixed charge problem

Publisher: Washington University

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17 Correction to 'Hypothesis Testing of complex Covariance Matrices'
K. Miller, M. Rochwarger

May 1976 **IEEE Transactions on Information Theory** , Volume 22 Issue 3

Publisher: IEEE Press

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18 Web 2.0 as Cognitive Tools in Teaching a Foreign Language: The use of Web 2.0 applications such as blogs in enhancing second language acquisition
Daniela Munca

March 2010 Web 2.0 as Cognitive Tools in Teaching a Foreign Language: The use of Web 2.0 applications such as blogs in enhancing second language acquisition

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19 An evaluation of standard retrieval algorithms and a binary neural approach
Victoria J. Hodge, Jim Austin

April 2001 **Neural Networks** , Volume 14 Issue 3

Publisher: Elsevier Science Ltd.

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Keywords: Correlation Matrix Memory, binary neural network, information retrieval algorithm, partial match, speed of retrieval, speed of training, storage efficiency, word—document association

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L1	0	(monitor$3 with ((chang$3 or modif$7 or delet$4 or write or updat$3 or synchroniz$5) near2 file$1)) same ((captur$3 or (back$3 near2 up)) with (before or after or prior or subsequent) with ((chang$3 or modif$7 or delet$4) near2 file$1)) same (identif$5 with (presence or exist$4) with archiv$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 14:32
L2	0	(monitor$3 with ((chang$3 or modif$7 or delet$4 or write or updat$3 or synchroniz$5) near2 file$1)) same ((captur$3 or (back$3 near2 up)) with (before or after or prior or subsequent) with ((chang$3 or modif$7 or delet$4) near2 file$1)) same ((identif$5 or search$3 or request$3 or check$3 or validat$4) with (presence or exist$4) with archiv$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 14:33
L3	5	((monitor$3 or detect$4) with ((chang$3 or modif$7 or delet$4 or write or updat$3 or synchroniz$5) near2 file$1)) and ((captur$3 or (back$3 near2 up)) with (proxim$5 or before or after or prior or subsequent) with ((chang$3 or modif$7 or delet$4) near2 file$1)) and ((identif$5 or search$3 or request$3 or check$3 or validat$4) with (presence or exist$4) with archiv$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 14:34
L4	2	3 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 14:34
L5	5	((monitor$3 or detect$4) with ((chang$3 or modif$7 or delet$4 or write or updat$3 or synchroniz$5) near2 file$1)) and ((captur$3 or (back$3 near2 up)) with (proxim$5 or before or after or prior) with ((chang$3 or modif$7 or delet$4) near2 file$1)) and ((identif$5 or search$3 or request$3 or check$3 or validat$4) with (presence or exist$4) with archiv$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 14:38
L6	5	((monitor$3 or detect$4) with ((chang$3 or modif$7 or delet$4 or write or updat$3 or synchroniz$5) near2 file$1)) and ((captur$3 or (back$3 near2 up)) with (proxim$5 or before or after or prior) with ((chang$3 or modif$7 or delet$4) near2 file$1)) and ((identif$7 or search$3 or request$3 or check$3 or validat$4) with (presence or exist$4) with archiv$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 14:38

L7	2	6 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 14:39
L8	5	((monitor$3 or detect$4) with ((chang$3 or modif$7 or delet$4 or write or updat$3 or synchroniz$5) near2 file$1)) and ((captur$3 or (back$3 near2 up)) with (proxim$5 or before or after or prior) with ((chang$3 or modif$7 or delet$4) near2 file$1)) and ((identif$7 or search$3 or request$3 or check$3 or validat$4) with (presence or exist$4) with archiv$3) and (backup or (back$3 near2 up) or (secondary near2 archiv$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 14:53
L9	2	8 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 14:54

EAST Search History (Interference)

<This search history is empty>

7/2/2015 2:59:51 PM
C:\Users\bto\Documents\EAST\Workspaces\13925768.wsp

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	9	graph$3 same (prosecution with history)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/07/02 15:01
L2	7	L1 and (@ad<"20111024" or @rlad<"20111024")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 15:01
L3	17	(graph$3 or map$1) same (prosecution with history)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/07/02 15:02
L4	5	(graph$3 or map$1) with (prosecution with history)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/07/02 15:02
L5	5	((graph$3 or map$1) with prosecution with history)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/07/02 15:03
L6	5	5 and (@ad<"20111024" or @rlad<"20111024")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 15:03
L7	0	graph$3 with (court$1 near2 (decision$1 or rul$3)) with case$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/07/02 15:05
L8	2	graph$3 with (court$1 near2 (decision$1 or rul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/07/02 15:05
L9	1	8 and (@ad<"20111024" or @rlad<"20111024")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/07/02 15:05

EAST Search History (Interference)

<This search history is empty>

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PTO/SB/08a (01-10)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	13925768
Filing Date	2013-06-24
First Named Inventor	Warren Roach
Art Unit	2162
Examiner Name	Baoquoc N To
Attorney Docket Number	6982-2-CON

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5524190	A	1996-06-04	Schaeffer et al.	
	2	5649196	A	1997-07-15	Woodhill et al.	
	3	5813017	A	1998-09-22	Morris	
	4	6134660	A	2000-10-17	Boneh et al.	
	5	6212512	B1	2001-04-03	Barney et al.	
	6	6269431	B1	2001-07-31	Dunham	
	7	6317845	B1	2001-11-13	Meyer et al.	
	8	6332200	B1	2001-12-18	Meth et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.T./

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13925768
	Filing Date	2013-06-24
	First Named Inventor	Warren Roach
	Art Unit	2162
	Examiner Name	Baoquoc N To
	Attorney Docket Number	6982-2-CON

	9	6353878	B1	2002-03-05	Dunham	
	10	6366988	B1	2002-04-02	Skiba et al.	
	11	6434681	B1	2002-08-13	Armangau	
	12	6496944	B1	2002-12-07	Hsiao et al.	
	13	6564215	B1	2003-05-13	Hsiao et al.	
	14	6571280	B1	2003-05-27	Hubacher	
	15	6611850	B1	2003-08-26	Shen	
	16	6615225	B1	2003-09-02	Cannon et al.	
	17	6802025	B1	2004-10-05	Thomas et al.	
	18	6847984	B1	2005-01-25	Midgley et al.	

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Application Number	13925768
Filing Date	2013-06-24
First Named Inventor	Warren Roach
Art Unit	2162
Examiner Name	Baoquoc N To
Attorney Docket Number	6982-2-CON

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	1	259912	EP	B1	1988-03-16	Bartlett et al.		☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

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EXAMINER SIGNATURE

Examiner Signature	/Baoquoc To/	Date Considered	08/08/2015

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.T./

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13925768
	Filing Date	2013-06-24
	First Named Inventor	Warren Roach
	Art Unit	2162
	Examiner Name	Baoquoc N To
	Attorney Docket Number	6982-2-CON

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yiu F. Au/	Date (YYYY-MM-DD)	2015-04-30
Name/Print	Yiu F. Au	Registration Number	67529

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed	PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT**
Application Number	13925768
Filing Date	24-Jun-2013
First Named Inventor	Warren Roach
Attorney Docket Number	6982-2-CON
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
Integrity PC Innovations, Inc.	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

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as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

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- has all claims canceled by a reexamination certificate;
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◉ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

○	I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.

Applicant claims the following fee status:

◉ Small Entity

○ Micro Entity

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

◉ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Registration Number 67529

○ A sole inventor

○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application

○ A joint inventor; all of whom are signing this request

Signature	/Yiu F. Au/
Name	Yiu F. Au

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	13925768
Filing Date:	24-Jun-2013
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Filer:	Yiu Fai Au
Attorney Docket Number:	6982-2-CON

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Statutory or Terminal Disclaimer	1814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**160**

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 13925768

Filing Date: 24-Jun-2013

Applicant/Patent under Reexamination: Roach et al.

Electronic Terminal Disclaimer filed on May 26, 2015

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

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Electronic Acknowledgement Receipt

EFS ID:	22451480
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Yiu Fai Au
Filer Authorized By:	
Attorney Docket Number:	6982-2-CON
Receipt Date:	26-MAY-2015
Filing Date:	24-JUN-2013
Time Stamp:	20:35:29
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$160
RAM confirmation Number	13881
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

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1	Electronic Terminal Disclaimer-Filed	eTerminal-Disclaimer.pdf	33476 0dd5fcbd9b8ae9adcc9e3803aac63e7bb032324d	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30343 a8459220d7dcdbb52d4442ac5170c34a0ebebbbf	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	63819		

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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.

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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.

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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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AUTHORIZATION TO ACT IN A REPRESENTATIVE CAPACITY

In re Application of: Warren Roach	
Application No. 13925768	
Filed: 06/24/2013	
Title: AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	
Attorney Docket No. 6982-2-CON	Art Unit: 2162

The practitioner named below is authorized to conduct interviews and has the authority to bind the principal concerned. (Note: pursuant to 37 CFR 10.57(c), a practitioner cannot authorize other registered practitioners to conduct interviews without consent of the client after full disclosure.) Furthermore, the practitioner is authorized to file correspondence in the above-identified application pursuant to 37 CFR 1.34:

Name	Registration Number
Ramraj Soundararajan	53832

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SIGNATURE of Practitioner of Record

Signature	/Yiu Au/	Date 2015-05-07
Name	Yiu Au	Registration No., if applicable 67529
Telephone	719-373-9237	

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EFS ID:	22284836
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Yiu Fai Au
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1	Power of Attorney	2015-05-07_FILED_Warren_Roach_Authorization_to_Act.pdf	433827 efa4ca56e89fc51ffaf0eab6b6019345228e7f1b1	no	2

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	2	5649196	A	1997-07-15	Woodhill et al.	
	3	5813017	A	1998-09-22	Morris	
	4	6134660	A	2000-10-17	Boneh et al.	
	5	6212512	B1	2001-04-03	Barney et al.	
	6	6269431	B1	2001-07-31	Dunham	
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	9	6353878	B1	2002-03-05	Dunham	
	10	6366988	B1	2002-04-02	Skiba et al.	
	11	6434681	B1	2002-08-13	Armangau	
	12	6496944	B1	2002-12-07	Hsiao et al.	
	13	6564215	B1	2003-05-13	Hsiao et al.	
	14	6571280	B1	2003-05-27	Hubacher	
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Name/Print	Yiu F. Au	Registration Number	67529

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DATABASE AND NETWORK JOURNAL, vol. 16, no. 2, 1986, pages 12-13, London, GB; "The 3+ network family"

PROCEEDINGS OF DESTRIBUTED COMPUTING, FALL COMPCON 80, 21st IEEE COMPUTER SOCIETY INTERNATIONAL CONFERENCE, Washinton, D.C., 23rd-25th September 1980, pages 101-107, IEEE, US; T.M. RYAN: "Backup and recovery for distributed interactive computer systems"

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EP 0 259 912 B1

SOFTWARE-PRACTICE AND EXPERIENCE, vol. 15, no. 9, September 1985, pages 889-899, John Wiley & Sons, Ltd, Chichester, GB; R.J. DAKIN et al.: "A large scale network storage facility"

DIGEST OF PAPERS OF THE SPRING COMPCON 85, 30th IEEE COMPUTER SOCIETY INTERNATIONAL CONFERENCE, San Francisco, 25th-28th February 1985, pages 144-147, IEEE, US; B. EISENHARD: "Network disk and file servers"

Description

The present invention relates to the backing up of files in a personal-computer community made up of a plurality of independently-operable personal computers communicating with a central station. In the present context, the term 'personal computer' is intended to mean an independently-operable computer work station arranged to operate under a file-based operating system to store and retrieve working files from a non-volatile storage area (floppy disc, hard disc or virtual disc) associated with that personal computer.

As is well know, it is customary to refer to different copies of the same computer file in terms of the function served by that copy. Thus, the copy of a file that is used on a day-to-day basis for computer processing purposes is referred to as the working copy. For reasons of data integrity, it is good practice to keep a relatively up-to-date copy of the working file to mitigate against the worst consequences of destruction of the working copy; this second copy is known as a backup copy. A third type of copy, known as an archive copy, may be used to store past, no longer current, versions of the file for record and other purposes.

The present invention relates to the taking of backup copies of the working files of a personal computer.

For backup copies to be an effective means of preserving data integrity, such copies must be taken regularly. A new computer user is usually difficult to convince that the time and effort involved in making backup copies is worthwhile - at least until the user suffers his or her first massive loss of data. Even experienced computer users are not well disciplined in taking backup copies. This is particularly true where the user has been used to working at a mainframe terminal where backup is the mainframe operators responsibility and not that of the individual user; the replacement of the terminal with a personal computer requires the user to take over the responsibility for data integrity and backup.

Added to the problem of educating users to be responsible for taking backup copies when operating personal computers, are the dis-incentives to performing backup that are dependent on the backup method used; such dis-incentives include length of time taken and cost of equipment required. Thus for example, backing up a hard disc by means of copying files to floppy discs, is generally unacceptable due to the time taken in terms of continual user intervention in swapping floppy discs. A much more suitable method for backing up the hard disc of a personal computer is to use a local tape device, often referred to as a tape streamer; however, the disadvantage of this solution is the high cost of providing a tape streamer for each computer (or alternatively, the inconvenience of transporting the streamer between a number of computers).

The document DATABASE AND NETWORK JOURNAL, Vol. 16, No. 2, 1986, pages 12-13, London, GB; "The 3+ network family" describes a personal computer community providing a file backup for the personal computers. The system comprises a plurality of independently operable personal computers, a central mainframe and a communications arrangement between the personal computers and the mainframe and provides a backup and a restore mode for the files. The system of this document does not disclose a concurrent backup request from several personal computers with the files subject to being divided into blocks interleaved for storage on the storage device of the mainframe.

The document DIGEST OF PAPERS OF THE SPRING COMPCON 85, 30th IEEE COMPUTER SOCIETY INTERNATIONAL CONFERENCE, San Francisco, 25th-28th February 1985, pages 144-147, IEEE, US; B. EISENHARD: "Network disk and file servers" relates to personal computers network system providing backup servers to backup data onto video tape. Dual processors control the placement of data onto video tape. One processor is dedicated to translation of the video data stream, and the second processor reads or writes data over the network to a target disk server.

It is an object of the present invention to provide a backup facility for a community of personal computers which is both convenient to use and relatively inexpensive.

According to the present invention, there is provided a personal-computer commonly comprising a plurality of independently-operable personal computers, a central station, and a communications arrangement communicating each personal computer with the central station, each personal computer being arranged to operate under a file-based operating system to store and retrieve working files from a non-volatile storage area associated with that personal computer, the operating system maintaining a directory of said files and in order to provide a file backup facility for personal computers:

- the central station is provided with a mass storage device,
- each personal computer is operative
  a) in a backup mode, to enable user-selection of files for backup and to transmit the selected files to the central station, and
  b) in a restore mode, to enable user-selection of files to be restored from backup, to request and receive the files selected for restore from the central station, and to update

the operating system file directory with an entry corresponding to each restored file; and

- the central station is arranged to store files transmitted thereto in said mass storage device and to return selected files when so requested;

said central station comprising a multi-tasking computer characterized by being operative to handle the file backup requirements of several said personal computers concurrently and to transfer files to said mass storage device in the central station in the form of blocks of data of predetermined maximum size, the central station when backing up several personal computers concurrently interleaving blocks from files of different personal computers.

This arrangement enables a plurality of personal computers to use a single resource for concurrently backing up files.

Advantageously, each personal computer is arranged to keep a backup directory of files backed up, this directory being accessible to a user to facilitate the selection of files for restore.

In order to avoid backing up files which have not been changed since they were last backed up, the backup directory is arranged to store file version data. If backup of the same file is subsequently requested, this version data is used to check whether any changes have been made to the file since its last backup.

BRIEF DESCRIPTION OF THE DRAWINGS

A file backup facility embodying the invention and for use in a community of personal computers, will now be described, by way of non-limiting example, with reference to the accompanying drawings, in which:

Figure 1
is a schematic representation of the personal computer community showing three personal computers each running a requestor program and linked to a central station running a server program;

Figure 2
is a diagrammatic representation of a tree-structured directory such as used by the personal computers of Figure 1;

Figure 3
is a diagram depicting the data structures making up a backup directory held by each personal computer;

Figure 4
is a diagram illustrating an inter-active file selection process forming part of the requestor program;

Figure 5
is a diagram depicting the data structures making up a file selection list generated in response to user inputs in the Figure 4 selection process;

Figure 6
is a flow chart of a requestor-program algorithm for changing in the file selection list, the selection status of all files in a particular sub-directory;

Figure 7
is a flow chart of a requestor-program algorithm for changing, in the file selection list, the selection status of a particular file;

Figure 8
is a flow chart of a requestor-program algorithm for interrogating the selection list to derive the selection status of a particular file;

Figure 9
is a flow chart illustrating the overall operation of the requestor program in backing up a selection of files to the central station;

Figure 10
is a flow chart of a requestor-program algorithm for checking the current/noncurrent status of files listed in the backup directory;

Figure 11
is a flow chart illustrating the overall operation of the requestor program in restoring a selection of files from the central station;

Figure 12
is a diagram illustrating the main processes, tasks and data structures of the server program run by the central station;

Figure 13
is a flow chart illustrating the main functions of a scheduler process of the server program;

Figure 14
is a flow chart illustrating the general form of a backup task and also of a restore task of the server program;

Figure 15
is a flow chart outlining the main functions of a tape handler process of the server program;

Figure 16A,B
are flow charts of two routines characterising a said backup task; and

Figures 17A,B
are flow charts of two routines characterising a said restore task.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Shown in Figure 1 is a community of personal computers (PCs) referenced PC1, PC2 and PC3 which are linked to a central station 10 via a local area network (LAN) 11 of any suitable form, including point-to-point and clustered configurations.

The central station 10 comprises in the present example, a mini computer 12 and its associated

peripheral devices including a hard disc storage device 13 and a low-cost mass storage device 14 here constituted by a tape storage device. The mini computer operates under a multi-tasking operating system.

As is illustrated in Figure 1 for PC3, each of the personal computers comprises a processor box 15, a disk storage device 16, an input device 17 (here shown as a keyboard), and a display unit 18. The disc device 16 may be one or more floppy disc drives and/or a hard disc unit; indeed, the device 16 may be a virtual disc device. In standard manner, the processor box 15 comprises a central processing unit 20 interfacing via a bus system 23 with memory (namely, volatile RAM memory 21, non volatile RAM memory 22 and the disc device 15) and also with the display unit 18 via a display controller 24, with the keyboard 17 via an I/O controller 25, and with the LAN 11 via a communications controller 26.

Each PC operates under a file-based operating system that utilises a tree-structured file directory, for example, MS-DOS versions 2.0 and above (MS-DOS is a trademark of MicroSoft Corporation). Files, whether data or program, are stored by the disc device 16 and are called into RAM memory 21 by the operating system as and when required.

Although the disc device 16 constitutes a permanent memory for the files, for reasons already discussed in the opening of the present specification, it is prudent to take regular backup copies of the files. To this end, and in accordance with the present invention, each PC is arranged under the control of a Requestor program, to backup files to and restore files from, the tape device 14 of the mini computer 12, the latter being controlled for this purpose by a continuously-available Server program.

The Requestor program for each PC is held in the local disc device 16 and is arranged to run under the local operating system. This program gives the user the choice of functions shown on the screen of the display unit 18 in Figure 1, namely the choice of:

1. backup of selected files,
2. backup of all files included in a predetermined list,
3. restoration of selected files.

Both backup choices involve the generation of a selection list of files to be backed up, the first choice requiring the generation of this list each time the choice is selected while the second choice utilises a list previously generated and stored (the pre-generation of this list being the fourth choice of the illustrated menu).

As will be more fully described hereinafter the generation of the backup selection list involves the presentation to the user of the current contents of the file directory of the PC's operating system (referred to below as the OS directory). The user then makes his choice of files for backup from the presented files.

In a similar manner, the restore choice involves the generation of a restore selection list by the user. In this case, however, the user makes his selection from the contents of a "backup" directory that records details of all files previously backed up from the PC concerned to the tape device 14 of the central station. In the present example, the maintenance of the backup directory is made the responsibility of each PC and the master copy of this directory is stored on the local disc device 16. However, a copy of the backup directory of each PC is also held centrally on the disc device 13 so that should a PC find that the local copy of the backup directory is missing or corrupted upon running the Requestor program, then a fresh copy of the directory can be rapidly called up from the central station. As an alternative to the above described arrangement, the backup directories for all the PCs could be maintained by the mini computer 12 and information from these directories only passed to the PCs upon request.

The backup directory may list different versions of the same file. Unless otherwise stated, the term 'versions' will be used herein to denote copies of the same file which differ in one or more specified version parameters such as file size, local operating-system time and date stamps, and access permissions. In order to distinguish between file versions, version data (size, time and date stamps, permissions) are held in the backup directory. Of course, only one version of a file listed in the backup directory can be 'current' in the sense that it is also listed in the current OS directory; indeed, if a file has been deleted from the OS directory, then all backed up versions will be non-current.

The backup directory is used not only to enable a user to make a restore selection, but also during backup to ensure that the same version of a file is not backed up twice at different times.

Returning now to a general consideration of the backup process, once the backup selection list has been generated or called up, a PC proceeds to establish communications with the central station 10 and to pass the selected files thereto in accordance with the relevant communications protocol. The files are in fact passed to the station 10 in predetermined maximum block sizes(64K). Since generally the data rate over the LAN 11 will be much lower than that required to stream the tape device 14, the received file blocks are first buffered to the disc device 13 before being recorded en bloc to the tape device 14.

The mini computer 12, under the control of the

server program, is arranged to handle simultaneously the backup requirements of a number of PCs, this being possible due to the multi-tasking nature of the mini-computer's operating system. In implementing this arrangement, the server program is arranged to interleave file blocks received from different PCs before streaming them to the tape device. Tape position information on each block is passed back to the relevant PC for storage in its backup directory together with data on the breakdown of each file into blocks.

During restore, block information on the files selected for restore is retrieved from the backup directory of a PC and used to request the mini computer to forward the appropriate file blocks. These blocks when received back at the PC are stored in the disc device 15 and the local OS directory is updated accordingly.

Due to the fact that the files selected for restore may be scattered over the whole length of the tape media of the tape device 14, it is preferable to arrange for the central station 10 to service only one restore request at a time.

Having outlined the general operation of the backup and restore facility of the Figure 1 PC community, a fuller description will now be given of the main novel functional components. However, before describing the backup and restore mode operations, the structures of the OS directory and backup directory will be considered so as to permit a proper understanding of the system functioning.

Directory Structures

Figure 2 is a diagrammatic depiction of the tree-structured file directory of each PC operating system. The first level or 'root' directory lists a first group of files F1 and, in the present example, two sub-directories D1 and D2. In a similar manner, each sub-directory lists one or more files and/or further sub-directories; thus, the sub-directory D1 has files F2 and two sub-directories D3 and D4. Files in different directories can have the same name and to identify uniquely a file, it is necessary to specify not only the file name but also the drive and chain of directories leading to that file, this combination being generally termed the file pathname. The pathname of the files F6 in Figure 2 is thus:

A:\D1\D4\D5

Typical data structures for implementing the OS directory are well known to persons skilled in the art and will not be described therein.

Figure 3 illustrates the data structures used for the backup directory. The backup directory comprises four linked lists the first of which is a path list containing an entry 30 for each different pathname of the backed up files.

The second backup directory list is a file list containing an entry 31 for each different backed-up file associated with a particular pathname. The file list entries associated with particular pathname are linked to each other and to the relevant path-list entry while the latter contains a pointer to the first associated file-list entry.

The third backup directory list is a versions list containing an entry 32 for each backed-up version of a file entered in the file list. The versions-list entries associated with a particular file are linked to each other and to the relevant file-list entry while the latter contains a pointer to the first associated versions-list entry. Each versions-list entry contains version identification data (file size, operating-system time and date stamps, permissions) and version status data (current or noncurrent).

The fourth backup directory list is a block-map list containing for each entry 32 in the versions-list, one or more linked entries 33 identifying the blocks into which the file version was divided when backed up. Each versions-list entry contained a pointer to the first associated block-map list entry. Each block-map entry contains information identifying the file block and indicating the position of this block on the tape storage media of the device 14.

File Selection Process

A basic operation associated with all three main requestor program functions ('selective backup'; 'backup all'; 'restore') is the interactive generation of a selection list by the user. As already noted, selection-list generation involves the display of the relevant directory (the OS directory in the case of the backup functions, and the backup directory in the case of restore). Thereafter, the user indicates which files are selected by using the PC input device 17 which, in the present example, is a keyboard.

In the present embodiment, the user can effect selection by file and by (sub) directory with the selection of a directory being taken as selection of all files in that directory and all sub-directories. Furthermore, files and directories can be specifically deselected so as to exclude these elements from a more general selection previously effected by choosing a higher level directory. The latest-in-time selection/deselection operation overrides earlier choices.

Figure 4 is a diagram illustrating the flow of control during the inter-active user-selection process. The first operation (block 40) is the display of the root directory of the OS or backup directory; the display of the root directory involves the display of all the files and subdirectories in the root directory. Next, a user selection phase is entered (block 41) in which the user is presented with a

number of choices any one of which he can select by pressing an appropriate one of the keyboard keys.

A first choice, referenced 42 in Figure 4, provides for movement of the cursor around the display to pick out one of the files or directories presented. It will be appreciated that this cursor movement may be controlled by one or more keys as is considered appropriate. Selection of the cursor movement choice 42 results in the PC effecting the relevant cursor movement (block 43) before re-entering the user-selection phase (block 41).

A second choice, referenced 44, initiates the display (block 45) of a sub-directory picked out by the cursor before control is returned to the user-selection phase (block 41). A third choice 46 reverses this process in that it causes the parent directory of the currently displayed directory to replace the latter on the screen display. Choices 42, 44 and 46 together thus enable the contents of the whole of the OS or backup directory to be displayed starting from the root directory.

A fourth choice, referenced 47, enables the whole of the currently-displayed directory to be selected, or if already selected, to be de-selected (the operation of the keyboard key relating to choice 47 thus being a toggling action). Selection of choice 47 results in the selection list being appropriately updated in a manner to be described, but here indicated by block 48. This is followed by the highlighting or dehighlighting of all the files and sub-directories of the currently-displayed directory to indicate the selection or de-selection respectively brought about by the toggling of choice 47. Highlighting control is effected by block 49.

A fifth choice, referenced 50, offered by the user-selection block 41 is the selection/de-selection of cursor-picked files or sub-directories. Again, the operation of the relevant keyboard key acts as a toggle between the select and de-select functions. Selection of choice 50 results in appropriate up-dating of the selection list (block 51) followed by appropriate up-dating of the screen highlighting (block 52).

Use of the user-selection choices 47 and 50 enables any desired combination of files to be selected. Thus, for example, the following sequence of operations enables the selection of all files with the exception of all-but-one of the files in a first level sub-directory:

Choice 47 - toggles Root directory selection/deselection ; since initially the Root director is unselected, this directory becomes selected and all the files and sub-directories entered in the root directory are highlighted on the display.

Choice 42 - the cursor is moved to pick out the sub-directory in which all files but one are to be deselected.

Choice 50 - toggles selection/deselection for the picked sub-directory; since this directory was previously selected, it now becomes deselected and is dehighlighted.

Choice 44 - replaces the root directory display with the contents of the sub-directory of interest

Choice 42 - the cursor is moved to pick out the file to be selected

Choice 50 - toggles selection/deselection of the picked file; since this file was previously deselected, it now becomes selected and is highlighted

Once the desired files have been selected, the user exits the user-selection phase (block 41) by selecting choice 53 labelled "proceed" in Figure 4.

The foregoing description of the interactive selection-list generation process is complete so far as the selection of files from the OS directory for backup is concerned. However, the generation of a selection list from the backup directory during a restore operation is somewhat more complicated due to the possible presence of several versions of the same file. This complication is dealt with in the following manner. First, for each directory displayed from the main backup directory, the file names of all entries from the relevant portion of the file list (that is the portion linked to the appropriate pathlist entry) are presented on the screen. For each file, there is an indication of whether any of the versions of that file contained in the backup-directory versions list is a current version, that is, is a version currently in the OS directory. If a file is picked and then selected via user choice 50, then the current version of that file will automatically be selected in preference to other versions; if no current version exists, then user choice 50 is ignored. In order to select a non-current version of a file, a user choice reference 54 must be selected to result in the display of all versions of a picked file (block 55). The user is now presented with three choices (see block 56) these being cursor movement 57, toggling (selection/deselection) of the cursor-picked version 58, and returning to the relevant directory (choice 59). Only one version of the file may be selected at any one time.

The selection status of a non-current file version is arranged to be unaffected by a subsequent change in selection status of its parent (or any ancestor) directory.

Selection List

In a preferred embodiment of the present in-

vention, each selection list, rather than being a straight list of all the files to be backed up or restored, takes the form of a two-part list in order to minimize the storage requirements of the list. The form of data structures used for the selection list will now be described with reference to Figure 5 followed by a description of the algorithms used to update and read the list (Figures 6, 7 and 8)

The selection list comprises a pathlist crosslinked with a filelist. Each entry 60 in the pathlist corresponds to a particular path and includes a pointer to any entries 61 in the filelist corresponding to files coming under that path.

Each pathlist entry and each filelist entry has an "include/exclude" flag for indicating whether the corresponding files are to be taken as included or excluded from the selection list.

At the start of a selection list generation process, the selection filelist is empty and the pathlist contains a single entry corresponding to the root directory of the disc device 15. For selection list generation during selective backup or during restore, this single pathlist entry has its include/exclude flag marked for "exclude"; however for generation of the predetermined selection list for use during the "backup all" mode, the include/exclude flag is preferably set to "include" and the root directory is appropriately highlighted when put up on the display screen 18.

Updating of the selection list in response to user selection choices 47 and 50 in Figure 4 is effected on the basis that the selection status of the particular directory or file has been toggled - the updating algorithms used are such as to automatically change the selection status of the corresponding file or directory. There is thus no need to indicate to these updating algorithms the absolute selection status of a file or directory.

Figure 6 is a flow chart of an algorithm for updating the selection list upon the selection status of a directory being toggled by the user. As can be seen, the first operation carried out by the updating algorithm is to search the selection pathlist to see if an entry already exists that corresponds to the directory concerned (block 62). If no entry is found in the pathlist (block 63), then a new entry is created for that directory (block 64) and this entry has its include/exclude flag set opposite to that of its nearest ancestor (block 65). Thus, if a subdirectory of an already included directory is toggled, then an entry is created for this sub-directory and the entry is marked for exclusion - this correctly reflects the user's choice since prior to being toggled , the sub-directory would have been displayed highlighted so that the toggling of the subdirectory must have been effected with a view to excluding the sub-directory from selection.

Returning to block 63, if an entry is found in the pathlist for a toggled directory, then the basic consequential operation is to change the status of the include/exclude flag of the directory entry. However, this operation will often result in redundant entries in the selection list as, for example, where several files have been specifically excluded from a selected directory and then this latter is subsequently deselected - in this case, the filelist will contain redundant exclusion entries for the files of the deselected directory. Since one of the main purposes of using the present selection list structure is to minimize the storage requirements for the selection list, the toggling of any pre-existing entry will generally be accompanied by housekeeping operations for removing entries rendered redundant by this toggling. In the present case, upon toggling of a directory for which an entry already exists in the pathlist, all filelist entries corresponding to current files of the directory and of all its sub-directories are deleted (blocks 66 and 67) since these entries will now be redundant. Furthermore, if the filelist of any subdirectory to the toggled directory is empty, then the pathlist entry corresponding to this sub-directory can also be removed (block 68). It should be noted that the filelist of the subdirectory will not necessary be empty as it may contain one or more entries corresponding to non-current file versions; as previously mentioned, the toggling of the selection status of a directory does not affect the selection status of non-current files. The reason why the sub-directory entry is left if a filelist entry exists that corresponds to a non-current file version, is that the algorithm to be described hereinafter with reference to Figure 8 for reading the selection list, requires the presence of a parent-directory entry as well as a file entry to properly identify the status of a non-current file contained in the filelist.

Following the deletion of unnecessary sub-directory entries in the pathlist, the include/exclude flag of the toggled directory is changed (block 69). If the status of this flag then corresponds to that of the nearest ancestor directory entered in the pathlist (block 70), and if the filelist of the toggled directory is empty (block 71), then the pathlist entry of the toggled directory is also redundant and can be removed (block 72).

Figure 7 is a flow chart of an algorithm for updating the selection list in response to the toggling of the selection status of a file (user choice 50 in Figure 4). The first step in this updating algorithm is to search the pathlist for an entry corresponding to the parent directory of the file (block 73). If no such entry is found (block 74) then one is created in the pathlist and its include/exclude flag is set the same as the nearest ancestor directory entry (block 75). Thereafter, a filelist entry is created for the toggled file (block 76)

and if the file is a current one (block 77) the include/exclude flag of the filelist entry is set opposite to that of the parent directory (block 78) as a current file will only have been toggled where its selection status is to be different to that of its parent directory. In the case of a non-current file, its include/exclude flag is set to "include" (block 79), the selection status of non-current files being independent of their parent directories.

Returning to block 74, if the initial pathlist search turns up an entry for the toggled file's parent directory, the filelist is then searched for an entry corresponding to the toggled file (block 80). If no such entry is found (block 81), then one is created in the filelist and its include/exclude flag is set as described above (see block 76 to 79). However, if a filelist entry is found for the toggled file, this entry is removed (block 82).

The updating algorithms described with respect to Figures 6 and 7 are those used by the interactive user selection process to create a selection list. The algorithm shown in the flowchart of the Figure 8 is that used by the main Requestor program to interrogate a selection list to discover whether any particular file has been selected or not.

To check the selection status of a given file, the pathlist is first searched for an entry corresponding to the file's parent directory (block 84). If no such entry is found (block 85) then there is no need to search the filelist since the Figure 7 updating algorithm will always cause the creation of a parent directory entry whenever a file list entry is generated. In the absence of a parent directory entry in the pathlist, the selection status of the file of interest is, of course, determined by the selection status of the nearest ancestor directory. Accordingly, the pathlist is next searched for the entry corresponding to the nearest ancestor entry (block 86) and the status of the include/exclude flag of this entry is returned as the selection status of the file of interest (block 87).

Where the initial pathlist search finds an entry corresponding to the parent directory file of interest, the Figure 8 algorithm proceeds to search the filelist for an entry corresponding to the file (block 88). If a filelist entry is found (block 89) the status of the entry's include/exclude flag is returned as the selection status of the file (block 90). If an entry corresponding to the given file is not found, then the status of the include/exclude flag of the parent directory entry is returned as the selection status of the file of interest (block 91).

It should be noted that when using the algorithms of Figures 6 and 7 in relation to a selection list for backup, the checking of the files identity can be based solely on the file's name since the only file versions being dealt with are current ones. However, in the case of a selection list created for restore, the checking of a file's identity must be based on a check not only of the file's name but also of its version data.

Having described the inter-active user selection process and the updating and interrogation of the resultant selection lists, a description will now be given of the backup and restore function themselves.

Backup Functions

Referring to Figure 9, if the user chooses the "selective backup" function from the main menu presented by the Requestor program, then a backup selection list is first produced in the manner already described with reference to Figure 4; this process is indicated in Figure 9 by block 92. Where the "backup all" function is selected by the user then a previously created selection list is fetched from store (block 93).

In either case, once a selection list is available, the Requestor program opens up the link via LAN 11 with the central station 10 and requests the services of the latter for effecting a backup operation (block 94). The Server program will either grant this request or in certain circumstances (such as where a request for restore is already being serviced) ask the requesting PC to wait for a predetermined delay time before requesting again (block 95). Where the Requestor program is asked to wait, it will close the link with the central station (block 96) and wait for the specified period of time (block 97) before reinitiating the backup request.

Once the Server program has indicated to a requesting PC that the central station's backup facilities are available, the PC Requestor program proceeds to identify the files to be backed up.

It will be appreciated from the form of the selection list that this list in itself does not contain adequate information to identify all files to be backed up. Instead, the selection list must be used in conjunction with the current OS directory to identify the files for backup. The file idenfication process involves walking through the OS directory and checking whether each file found is encompassed by the current backup selection list. Algorithms for walking through the OS directory to find each file in turn will be apparent to persons skilled in the art and will therefore not be elaborated herein. However, it should be noted that so far as the main Requestor program is concerned (Figure 9) this walking of the OS directory is only required to be carried out one step at a time and that it is therefore necessary to maintain a pointer indicating the progress of this walkthrough.

The initial step in identifying the files to be backed up is therefore to initialise an OS search

pointer to the start of the OS directory (block 98). Thereafter, the walkthrough of the OS directory is commenced (block 99) and when a file is found the search pointer is updated and the identity of the file is extracted (blocks 99,100).

The backup selection list is then interrogated in the mann previously described to check whether the file found by walking the OS directory is one selected for backup (block 101). If the file is not to be backed up, walking through of the OS directory continues from the new pointer position.

If, however, the file is found to be one selected for backup, a check is next made to see if that particular file version has already been backed up (block 102). This check is made by searching the backup directory and, again, appropriate search algorithms will be apparent to persons skilled in the art. If the current file version has already been backed up, then the walkthough of the OS directory is continued. Where the file version is not already backed up, the Requestor program creates a new entry for the file version in the backup directory (block 103) before proceeding to split the file into blocks and transmit them over the LAN 11 to the central station 10 (block 104). The creation of a new backup directory entry will always involve the creation of a new entry in the versions list (see Figure 3) and may also involve new entries in the filelist and pathlist. The splitting of the file into blocks results in appropriate entries being generated in the block map list.

The correct receipt of the file blocks by the central station 10 is, of course, checked for in accordance with the communications protocol being used. However, in addition, a check is made that the transmitted file blocks have been recorded on the storage media of the tape device 14. This check may be implemented by arranging for an appropriate message to be passed by the Server program to the requesting PC following a successful read-after-write operation on a file block. The Requestor program of the PC checks that messages have been received on all transmitted file blocks by maintaining a temporary transport acknowledgement list linked to the block map list. The messages passed back from the Server program to the Requestor program also contain data mapping block identity to relative position on the tape media, this information being stored in the relevant block map list entry for each file.

After all file blocks have been acknowledged as having been correctly recorded on the tape media, the walkthrough of the OS directory is continued to find the next file. If one or more file blocks are not acknowledged as having been correctly recorded on the tape media after a predetermined timeout, then an alarm is raised (see blocks 105 and 106).

In due course, the walkthrough of the OS directory will be complete. Thereafter, an end-of-data (EOD) messsage is transmitted and the backup directory is updated in respect of which file versions listed therein are current (see blocks (135 and 107). Figure 10 shows in flow-diagram form a suitable algorithm for effecting this file-version status check. As can be seen, this check is carried out by walking through the backup directory and stopping at each file version marked as current to see if that file version is still listed in the OS directory. The process of walking through the backup directory is controlled by a search pointer initialised to the start of the backup directory (block 110). Upon a file version marked current being found, (blocks 111 and 112) the search pointer is updated and then a check is made as to whether that file version is still present in the OS directory-(113). If the file version is present in the OS directory, the process of walking through the backup directory continues from the position indicated by the search pointer. However, if the file version is no longer contained in the OS directory, the status of that file version is marked as non-current in the versions list of the backup directory (block 114).

After the updating of the file-version status information in the backup directory, the Requestor program proceeds to transmit the updated backup directory to the central station 10 (block 108) before sending an end-of-transmission (EOT) message to initiate closing of the link (block 109). The updated backup directory is stored in the central station on the disc device 13.

For reasons which will become clear below, it is desirable to enable the Server program to abort a backup operation. This can be achieved by substituting an abort message for a file block acknowledgement normally transmitted during execution of block 104; upon detecting such an abort message, the Requestor program can simply be arranged to close the link and terminate the current backup session, the whole backup operation being automatically re-initiated from block 94 after a predetermined delay.

The Restore Function

Selection of the restore choice from the opening menu presented by the Requestor program results in the sequence of operation illustrated in Figure 11.

The first operation is the inter-active generation of the restore selection list (block 115) in the manner already described with reference to Figure 4. Thereafter, the Requestor program opens the link with the central station 10 and passes a request thereto asking for the facilities of the central station to be made available for restoring one or more files to the requesting PC (block 116). As already noted,

to facilitate access to the serial storage device constituted by the tape device 14, only one restore operation is allowed to be in progress at any one time and this operation cannot be effected at the same time as a backup operation. The Server program is therefore arranged to grant a restore request only if no other restore or backup process is in operation. If a restore or backup operation is running, then the Server program asks the requesting PC to wait (block 117) and, in this case, the Requestor program will close the link with the central station (block 118) and waits a pre-determined time before re-opening the link and re-submitting its restore request to the central station (block 119).

In due course, the restore request will be granted. Thereupon, the Requestor program will identify the files to be restored by walking the backup dictionary and checking each entry against the restore selection list. The step-by-step walkthrough of the backup directory requires the maintenance of a search pointer which is initialised to the start of the directory and updated each time a file is found and the walkthrough interrupted to check whether that file is in the restore selection list (see blocks 120, 121 and 122). Suitable algorithms for searching the backup directory on a file version by file version basis will be apparent to persons skilled in the art.

Each file version found in the backup directory is checked against the selection list in the manner already described with reference to Figure 8 (block 123, Figure 11). If the file is not indicated as being selected upon inspection of the list, the walkthrough of the backup directory is continued.

Upon identification of a file version selected for restore, the Requestor program first checks to see whether the existing OS directory is already structured with the path relevant to that file (block 124). If no such path exists, then the appropriate directory entries are created in the OS directory using the operating system functions which, in the case of MS-DOS are accessible through interrupt 21H (see block 125 in Figure 11).

If the path of the file to be restored already exists in the OS directory, then a check is next made as to whether the OS directory contains an entry corresponding to that file (block 126).

Where no file entry is pre-existing, then both in the case of a pre-existing path and in the case of a newly created path, a file entry is created in the OS directory corresponding to the file to be restored (block 127). Thereafter, the Requestor program utilises the data stored in the block map list of the backup directory to request the central station to forward the appropriate file blocks making up file to be restored (block 128). As will be explained hereinafter, the Server program does not respond to the file-block requests immediately but awaits the receipt of an EOD message before doing so. Once all the relevant blocks have been requested, the Requestor program continues its walk through the backup directory.

Returning to block 126, if the search of the OS directory shows that the file to be restored is already entered in the directory (albeit a different version of the file), the Requestor program prompts the user to confirm that he wishes the existing entry to be overwritten by one corresponding to the file version previously indicated as required for restoration (block 129). If the user indicates that he wishes the restore operation to continue (block 130), then the previous OS directory entry is overwritten (block 131) and the Requestor program proceeds to request the appropriate file blocks from central station 10. On the other hand, where the user indicates that he no longer wishes the restoration of the selected file to continue, the Requestor program returns to its walk through of the backup directory.

In due course, the walkthrough of the backup directory will be completed whereupon the Requestor program transmits an EOD message the effect of which is to trigger the Server program to retrieve and forward the requested file blocks (see blocks 132,133). After all requested file blocks have been received, the Requestor program send an EOT message to initiate closing of the link with the central station 10 (block 134).

The process of walking through the backup directory can generally be considerably shortened due to the fact that files selected for restore are normally to be found in only one or two subdirectories. Rather than walking the whole backup directory, the selection list can be examined to ascertain which directories are going to be relevant and then only these directories are walked.

A second type of restore request may be made by the Requestor program itself, this being a request for restoration of the appropriate backup directory; such a request is made by the Requestor program if upon initialisation the latter discovers that the directory is not present at the PC. A directory restore request will generally be granted immediately by the Server, the restore operation itself being terminated with an EOT message.

The Server Program

Having described the operation of the requestor program run by each PC, the functioning of the server program at the central station 10 will now be explained.

As already noted, the server program is designed to run under a multi-tasking operation system. The program comprises three main processes

which run concurrently on the computer 12; as show in Figure 12, these three processes are respectively a monitor process 140, a scheduler process 141 and a tape handler process 142.

Whenever a PC makes a request to the central station 10 to backup or restore one or more files, the PC first establishes a virtual circuit with the computer 12 and directs its request to the monitor process 140. This process 140 is arranged to create for each requesting PC a respective task 143 which will be either a backup or restore task depending on the nature of the request. This task 143 then deals with all further communication between the server program and the particular PC concerned. On termination of a request due to its successful execution or otherwise, the task closes down the virtual circuit with the associated PC and then dies. At anyone time, several tasks 143 may be in existence.

As will be more fully explained hereinafter, upon creation, each task 143 checks in with the scheduler 141 which determines whether the request from the corresponding PC can be dealt with straight away or must be delayed. In the present embodiment, the scheduler is arranged such that a backup request cannot be granted whenever a previously-granted restore request is still being serviced though a restore request will cause any current backup task to be cancelled; furthermore, only one restore request may be serviced at a time though several backup requests can be serviced together.

Upon the scheduler granting a request, the relevant task 143 then proceeds to interface with the tape handler 142 to transfer file blocks in the appropriate direction between the requesting PC and the tape device 14. Communication between the task 143 and the tape handler process 142 is by way of:

- Request messages passed from the task 143 to the handler in response to inputs received from the corresponding PC; the main types of request messages are for the backup of a file block just received from the PC (a backup request message) and for the restore of a file block requested by the PC (a restore request message).
- Acknowledgement messages passed from the tape handler to the task to acknowledge the completion of a requested operation. Again, the main types of acknowledgement are backup acknowledgements output when a file block has been stored on tape, and restore acknowledgements output when a requested block has been read from the tape.

In the case of a backup operation, the task 143, as well as interfacing with the tape handler 142, also takes care of buffering file blocks to the disc device 13 prior to these blocks being streamed to the tape device 14 by the tape handler 142. The disc device 13 is also used to store the backup directories relating to each PC.

As will become clear below, an important data structure in the file-block transfer operation is a block table 144 which is a list of file blocks to be transferred to or from the tape device 14. Each active task has a version 144A of this table for the blocks it is responsible for, while the tape handler has a single table 144B which deals with all blocks that have been passed to it.

Another important data structure is a user status list 143 associated with the tape handler 142. This list 145 records for each user PC whether that PC is in one of the following four states:

Inactive
Active
Complete
Acknowledged

The last three states correspond to a user PC being at different stages in the process of transferring data to/from the central station 10. Each user entry in the user status list also contains other information such as the number of outstanding blocks waiting to be transferred to or from the tape device 14. A more detailed explanation of the operation of the server program will now be given starting with a description of the scheduler process 141.

The Scheduler

As already noted, the function of the scheduler is to decide whether a newly-created task 143 should be allowed to run immediately or delayed for a predetermined period (in which case the task is, in practice, terminated and recreated by the monitor 140 in response to the relevant PC repeating its request after the predetermined delay).

The scheduler maintains a list of currently active tasks previously allowed to run by the scheduler.

Upon a newly-created task 143 checking in with the scheduler, the latter checks to see if a restore task is already current since if this is the case, no further tasks will be allowed and the scheduler will return a pre-set delay time, for example, 15 minutes, via the new task to the requestor PC (see blocks 150, 154, 159 in Figure 13). Where a restore task is not currently running, the scheduler next ascertains whether the checking-in task is a backup task or a restore task (block 155). In the latter case, the new task will have priority over any current task (as such tasks will be backup tasks,), so that the scheduler proceeds to abort all current tasks, grant the restore task request and update the current task list

(blocks 156, 157, 158). On the other hand, if the checking-list task is a backup task, this will be allowed to run alongside the existing current backup tasks provided no more than a predetermined maximum number (for example, four) of such tasks are simultaneously current (block 153); if this condition is not fulfilled, the scheduler does not allow the task to run and returns a delay time.

When a task has been completed, it checks out with the scheduler which then removes the task from the list of tasks being run (block 160).

In order to facilitate the restoration of a PC backup directory, the scheduler can be arranged to grant such requests immediately (this facility is not shown in Figure 14). This does not cause currently active Backup tasks to be cancelled.

General Form of Backup and Restore Tasks

The general form of the task 143 created by the monitor process 140 is the same for backup and restore; Figure 14 is a flow chart representation of this general form.

Following task creation (block 161) the task receives various necessary items of data from the monitor process and the associated requestor PC (block 162); this data includes the messaging addresses for the scheduler and tape-handler processes 141, 142 and the return address of the requestor PC. Thereafter, the task checks in the scheduler process 141 by sending an appropriate message to the process (block 163).

As already described with reference to Figure 13, the scheduler will either allow the task to proceed or will return a delay time. If a delay time is returned (tested for in block 164), the task proceeds to report this delay back to the associated PC (block 165); thereafter, the task closes the virtual circuit link with the PC (block 166), checks out with the scheduler (block 167) and then dies (block 168).

If the scheduler allows the task to proceed immediately, the task informs the tape-handler by passing an access request message to the handler (block 169); the acknowledgement returned from the tape handler is then passed back by the task to the requesting PC (block 170) to indicate to the latter that it may proceed with the requested backup or restore function.

The task thereafter enters a cyclic phase in which it receives messages from the requesting PC and the tape handler (block 171), determines the origins of these messages (block 172) and then executes an appropriate routine in dependence on the message origin (routine 1 for messages from the requestor PC and routine 2 for messages from the tape-handler).

The task continues to receive messages and execute the appropriate routine until it receives an EOT acknowledgement from the tape-handler (block 173) as a consequence of the requestor PC having completed the desired function and sent an end-of-transmission message via the task to the handler which has thereupon acknowledged the receipt of the EOT message. Upon detection of the EOT acknowledgement, the task proceeds to close the link, check out with the scheduler and die (block 166 to 168).

The nature of routines 1 and 2 does, of course, depend on whether the task is a backup or restore task. Routines 1 and 2 will be described in greater detail hereinafter following a general outline of the tape-handler process 142.

The backup task in fact includes one additional branch not shown in Figure 14, permitting the scheduler process to abort a current backup task. This branch originates at a further exit from block 172 and is taken upon an abort message being received by the scheduler; the branch controls the passing of an abort message to the corresponding requester PC and to the tape-handler, after which blocks 166 to 168 are executed.

The Tape-Handler

The basic operation of the tape-handler process is to service request messages passed to it by the currently task or tasks 143. Five separate types of request messages can be distinguished, these being:

1) access request messages from newly allowed tasks whereby the associated requesting PC is noted as active by the tape-handler;

2) backup request messages from backup tasks requesting the tape-handler to store to tape file blocks received by the task from their associated PCs - these requests may not be complied with immediately by the tape-handler as it may wait for sufficient file blocks to be present to facilitate streaming of the tape;

3) restore request messages from a currently running restore task requesting the tape-handler to read off particular file blocks from the tape device and pass them back to the appropriate PC;

4) directory request messages from tasks wishing to backup or restore PC backup directories stored on the disc device 13;

5) abort request messages from a backup task, requesting the tape-handler to note that the task is being aborted.

The tape-handler process can reside in any one of the three main modes namely a no-operation mode (NOP mode), a backup mode in which the handler is dealing with one or more backup requests only, and a restore mode in which the

handler is dealing with single restore request only. The current mode of the tape-handler depends on the type of task currently being allowed to run by the scheduler process; when no task is current the tape-handler is in the NOP mode.

Referring now to the tape-handler flow chart shown in Figure 15, the cycle of operation of the tape-handler starts with the latter reading in a message sent to it from a task (block 175). After determining the message type (block 176), the tape-handler proceeds to process the message accordingly.

Starting from the situation where the tape-handler is in its NOP mode, the next message that it will receive is an access request message from a backup or restore task. Having determined the message type, the tape-handler resets its mode to correspond to that of the originating task (backup or restore), an indication of the task type being contained in the access request message (block 177). In the case of an access request being made by a backup task when similar tasks are already running, the latest access request will already find the tape-handler in the appropriate mode so that the mode-setting operation is skipped by carrying out an appropriate test (block 178). Thereafter, the tape handler updates the user status list 145 by noting that the user PC initiating the current task is "active" (block 179). Once the user list has been updated, the tape-handler acknowledges the access request by passing back a message to the task concerned (block 180); as previously noted, this acknowledgement is forwarded by the task to the requesting user PC (see block 170, Figure 14).

After a task has signed on with the tape-handler by means of an access request message, it proceeds to send backup or restore request messages to the tape-handler and receives appropriate acknowledgements therefrom until the desired function of backup or restore is complete. A detailed description of the processing of backup and restore request messages by the tape-handler will be given hereinafter when describing the routines 1 and 2 that are at the heart of the backup and restore tasks.

The tape handler responds to a directory request message either by backing up to, or restoring from, an allocated disc file, the backup directory of the PC associated with the task sending the request message (block 233, 181).

Finally, on receipt of an abort message, the tape handler will set the status of the corresponding user to "inactive", remove any relevant entries from the tape-handler block table 144B, and, if all users are then "inactive", reset its mode to NOP (see blocks 230 to 232).

The Backup Operation

The inter-action of a backup task and the tape-handler process in carrying out the backup operation to the tape device 14 will now be described with reference to the tape-handler flowchart Figure 15 and to the flowcharts of Figures 16A and 16B which respectively illustrate the form of the routines 1 and 2 in the back up task.

It will be assumed that a PC requiring backup has made an appropriate request to the central station and that a corresponding backup task has been created by the monitor process 140; it will also be assumed this task has been allowed to proceed by the scheduler process 141 and that the task has signed on with the tape-handler process 142 and returned the acknowledgement received therefrom back to the requesting PC. The backup task is therefore at the position of block 171 in the Figure 14 task flowchart and is ready to receive messages from the requesting user PC and the tape-handler process; the tape-handler itself is in its backup mode and ready to receive messages from the backup task.

The first message received by the backup task will be from the associated PC and will include a file block to be backed up to tape. On receipt of this message, the backup task executes backup routine 1 shown in Figure 16A. This routine first tests the contents of the message received from the PC (block 182) to ascertain whether the message contains file data to be backed up to the tape device, backup directory data to be stored on the disc device, or an end-of-data (EOD) or end-of-transmission (EOT) signal. As already noted, the first message received from the PC will contain file data and the backup routine 1 proceeds by spooling this data to a temporary disc file (block 183). Having spooled the file data to disc, the routine updates the task block table 144A with an entry identifying the file block and its origin (block 184). Thereafter, the routine notifies the tape-handler process that it has a file block waiting to be backed up to tape, this notification being by way of a backup request message (block 185). The backup task then exits routine 1 and waits to receive another message.

The tape-handler, having received the backup request message from the backup routine 1, first tests to see whether the message is informing it of the presence of a file block to be backed up or whether the message contains an EOD or EOT indication in respect of the current backup operation (block 186). Having determined in the present case that the backup request message relates to the presence of a file block to be backed up, the tape-handler process first notes the existence of the file block awaiting backup by both making an entry in the block table 144B and updating the blocks outstanding field for the appropriate user

entry in the user status list 145 (see block 187). Thereafter, the tape-handler checks to see whether the aggregate size of the file blocks temporarily held on the disc device is sufficient to enable streaming of the tape device 14 (block 188). If this is not the case, the tape-handler takes no immediate further action and awaits receipt of the next message. On the other hand, if the aggregate size of outstanding blocks is such as to enable the tape device to be streamed, then the tape-handler initiates transfer of the corresponding file blocks from the disc device to the tape device (see block 189), the necessary information on the blocks being available to the tape-handler in the block table 144B. As each file block is written to tape a read-after-write check is carried out and, assuming that the results of this check are satisfactory, the tape then passes an acknowledgement message back to the appropriate backup task and updates the block table 144B and the blocks-outstanding information in the appropriate user list entry.

It should be noted that since more than one backup task may be running, the question of whether there is sufficient file data to stream the tape device will not necessarily depend upon whether sufficient data has been received from any particular PC. Furthermore, the updating of the user status list and the destination of acknowledgment messages will depend upon the user (requesting PC) associated with each file block backed up to tape.

The flowchart blocks 190 and 191 shown as following the write-to-tape block 189 in Figure 15 relate to happenings that occur at the end of the backup operation and will be described later on; for the moment, it will be assumed that they do not apply to the backup operation under consideration so that after carrying out the functions indicated in block 189 the tape-handler returns to await the receipt of the next message.

Returning now to the backup task, the next message received by this task will generally either be a further file-block-containing message from the requesting PC or, if the tape-handler decided that it could stream from the tape device, an acknowledgement message from the tape-handler indicating that the previously-received file block has been successfully written to tape. In this latter case, the backup task will proceed to execute routine 2 illustrated in Figure 16B. This routine involves an initial test of the acknowledgment message to see whether it is an acknowledgement of file block data or of an EOD/EOT signal (block 192). Where a fileblock has been acknowledged, the routine looks after passing on the acknowledgement back to the requesting PC (block 193), deleting the block from the temporary disc file where it was stored on receipt (block 194), and updating of the task block table 144A by removal of the corresponding entry (block 195). On exiting routine 2, the backup task returns to block 171 to await receipt of the next message.

In the general case, in due course another message will be received from the requesting PC containing fileblock data to be backed up. Such a message is dealt with in the manner already described by the backup task calling routine 1 to notify the tape-handler of the presence of the newly received file block. Furthermore, the tape-handler will deal with the new backup receipt in the manner already described, only returning acknolwedgements when the file block is written to tape and checked.

When the requesting PC has transmitted all the fileblocks intended, it sends an EOD message. This message is identified by backup routine 1 and passed to the tapehandler in a backup request message (see block 196 in Figure 16A). On detecting the presence of an EOD signal in the backup request message, the tape-handler sets the status of the corresponding user PC as "complete" in the user status list 145 - that is, the PC has completed its transmission of file data (block 197 in Figure 15). However, this status does not mean that the backup of file data is complete since there may still be file blocks temporarily stored on disc waiting to be written to tape. If a test shows that this is not the case (block 198) then the EOD signal is acknowledged and the user status in the user status list 145 is set to "acknowledged" (block 191). On the other hand, if there are still file blocks waiting to be written to tape, then a check is made (block 191) as to whether there are any other user PCs active since, if not, this means that the critical size for streaming will not be reached in the near future and the backup operation could effectively be suspended until some indeterminate time when another backup task is initiated. To avoid this situation, if there are no other active users, the tape handler writes any outstanding blocks to tape and acknowledges the blocks in the usual way. When the last block has been written to tape and acknowledged the status of the user is changed from "complete" to "acknowledged" and an EOD acknowledgement sent (blocks 190, 191). If, however, the test carried out in block 199 shows that there are users still active, then the writing of outstanding blocks is deferred as it is quite likely that a streamable mass will be shortly achieved; of course, even in this deferred situation once all outstanding blocks of a "completed" user have been written to tape, that user's status is set to "acknowledged".

On receipt of an EOD acknowledgement message, the backup task relays this acknowledgement to the corresponding PC (see block 200 of backup

routine 2 in Figure 16B).

It should be noted that the file block acknowledgements passed back by the backup routine 2 to the corresponding PC contain tape location information for the corresponding file block and this information is stored by the requesting PC in the block map list of its backup directory.

After the requesting PC has transmitted all the file data to be backed up and followed it with an EOD message, the PC next sends up the updated backup directory for storage by the disc device 13. Upon the backup task ascertaining that the contents of a message from its associated PC contains backup directory data (see block 182 in Figure 16A), the task after having first spooled the data to a temporary disc file, sends a directory request to the tape-handler requesting the latter to backup the directory to disc (blocks 201,202). The tape-handler then proceeds to write the directory data to a predetermined disc file associated with the requesting PC overwriting any existing information in that file (block 233). The tape handler then passes an acknowledgement to the backup task which forwards this acknowledgement to the PC (block 203, Fig. 16B).

Finally, the requesting PC will transmit an EOT message. This message is passed by backup routine 1 to the tape-handler as a consequence of which the status of the corresponding user PC is set as "inactive" in the user status list (see block 205 in Figure 15). The EOT message is then acknowledged by the tape handler (block 206) and if no non-inactive users remain, the tape-handler reverts to its NOP mode (blocks 207 and 208). After passing back the EOT acknowledgement from the tape handler to the requesting PC, the backup task closes the link with the PC and checks out in the manner previously described.

The Restore Operation

The inter-action of the restore task and the tape-handler process in carrying out a restore operation will now be described with reference to the tape-handler flowchart of Figure 15 and the flowcharts of Figures 17A and 17B which respectively relate to the restore routines 1 and 2. As with the description of the backup operation, the following description of the restore operation will assume that a restore task has already been created in response to a request from a PC and that this task, after having been allowed and having checked in with the tape handler, is awaiting receipt of a message from the requesting PC.

The PC concerned may request either the restoration of one or more files by making requests for the constituent file-blocks or, alternatively, may request the restoration of the backup directory associated with the PC and stored on the disc device 13.

Considering first the case where the PC requests the restoration of one or more files, upon receipt of a message from the PC identifying the first file block to be restored, the restore routine 1 (see Figure 17A) having tested for the type of restore requested (blocks 210), makes an entry in the task block table 144A in respect of the requested fileblock and then notifies the tape-handler of the restore request (blocks 211,212).

On receipt of a restore request message from the restore task, the tape handler first checks whether the message is a true request or merely one containing EOD/EOT information (blocks 213 of Figure 15). The tape-handler in response to receiving a file-block restore request, makes an appropriate entry in its block table 144B and also updates the user list 145 regarding the number of blocks to be restored (block 214); however, block restoration does not take place immediately.

The process of receiving file-block restore requests and logging them continues in the above manner until all such requests from the requesting PC has been received. In due course, the PC will send an EOD message which will be passed by the restore routine 1 to the tape-handler (see block 215 in Figure 17A). On receipt of an EOD indication in a restore request message, the tape-handler changes the status of the user PC in the user status list 145 from "active" to "complete" (block 216). The tape-handler then proceeds to read off the required blocks from the tape back to the requesting PC (block 217). This process involves the tape-handler referring to the block table 144B to identify each block to be restored and its location on the tape, this information having been passed up to the central station from the requesting PC. In order to facilitate this process the entries in the block table 144B are linked in the order in which the fileblocks appear on the tape, this linking being carried out at the time each newly received block is entered into the block table.

As each block is read off the tape and passed to the restore task, the block table 144B and blocks outstanding information contained in the corresponding user list entry are updated.

Each file-block-containing message received by the restore task from the tape-handler is forwarded with an acknowledgement to the requesting PC (blocks 218, 219 Figure 17B). In addition, the restore task updates the block table 144A by removing the entry corresponding to the file block passed back to the PC (block 220).

After all the requested blocks have been restored, the tape-handler passes an EOD acknowledgement message to the restore task (block 221) and the status of the user PC in the user status list

145 is changed from "complete" to "acknowledged" (block 222). On receipt of the EOD acknowledgement from the tape-handler, the restore task routine 2 passes on this acknowledgement to the requesting PC (block 223, Figure 17B).

In due course, the requesting PC transmits an EOT message which is passed by the restore-task routine 1 to the tape-handler. The latter, on receipt of the restore request message containing an EOT indication, changes the corresponding entry in the user status list from "acknowledged" to "inactive", passes an EOT acknowledgement message to the restore task, and resets itself into its NOP mode (blocks 224, 225 and 226 in Figure 15).

On receiving the EOT acknowledgement from the tape-handler, the restore task forwards the acknowledgement to the requestor PC and then closes the link and checks out in the manner previously described.

In the case where the requesting PC requests restoration of the last-stored backup directory, the restore-task routine 1, on detection of such a request, asks the tape-handler to forward it the backup directory (block 227 of Figure 17A). On receipt of this request the tape-handler, reads off the backup directory information from the disc device 13 and forwards it to the restore task which, in turn, forwards it to the requesting PC together with an acknowledgement of the request (block 228). Thereafter, the requesting PC transmits an EOT message which is forwarded by the restore task in a restore request message to the tapehandler to be dealt with in the manner explained above.

It is convenient to arrange for backup-directory restore requests to queue jump the normal operation of the server program. This can be readily achieved by arranging for the scheduler process always to allow such requests. In addition, it would be necessary to arrange for the tape handler not to reset its mode upon receiving an access request for directory restore or upon an EOT indication being receiving at the end of processing such a request. With these modifications, a backup-directory restore request could be processed alongside any other type of request.

It will be appreciated that the above-described algorithms have been simplified in certain respects to aid the clarity of the description. In particular, the various error condition traps that would normally be included in such algorithms have not been specificially disclosed as suitable implementations of such traps will be readily apparent to persons versed in good programming practice.

Furthermore, many variations are possible from the disclosed algorithms without loss of the benefits of the present invention. Thus, for example, instead of the tape handler in its restore mode waiting until all desired files have been requested before initiating file restore, each file block could be restored immediately following receipt of the restore request by the tape handler. Such an arrangement would only be practical, however, where the requestor program carried out an initial sort of the files required so as to transmit file-block restore requests in the order that the file blocks appear on the tape media.

In another possible variation, the scheduler process is arranged to generate a queue list of requests that it cannot immediately grant; this queue is in time order of request receipt except that restore requests are placed above backup requests. Instead of a refused requester PC being asked by the scheduler to try again after 15 minutes without any priority as compared to a first time requester, the scheduler now returns to the requester PC a delay time calculated to be the time after which the scheduler can grant its request taking into account its position in the queue and the types of tasks in front of it. If upon retrying, a PC's request still cannot be granted, it retains its position in the queue and a new estimate of when the server will be free is returned to the requesting PC.

Again, whereas in the described embodiment, the transmission of data (file or directory) takes places separately from EOD or EOT indications, such indications can, in fact, be included in data-transmitting messages provided that the indication is not acted upon until the transmitted data has been appropriately handled.

The above-described backup and restore arrangement only backs up file versions not previously backed up. For various reasons, it may be desirable to provide a user with the option to backup a file version already backed up on a previous occasion. In this case, in order to distinguish between the two otherwise identical backups of the same file, the file version information stored in the versions list of the backup directory, must be expanded to include a backup time and date stamp; this stamp is then presented to the user whenever he selects the "display versions" option of the restore user-selection menu (see Figure 4).

In the described backup and restore arrangement it has been assumed that all backed-up file data is stored on a single tape media. Where large volumes of data are to be backed up, provision can be made for using multiple tape volumes arranged in one or more volume sets. Various strategies are possible for using and accessing the tape volumes. Thus, for example, it is convenient normally to have on-line a particular empty or only partially-full tape volume to which all backups can be made regardless of their originating PC; this tape volume would only be replaced either temporarily when carrying out a restore from an earlier tape volume,

or when the tape volume becomes full. It is of course, necessary for the tape location information held in the block map list of a PC's backup directory, to identify uniquely the tape volume holding each fileblock. During a restore operation, each tape volume containing relevant file blocks is called up in turn and all fileblocks of interest are read off before another volume is mounted; this orderly retrieval of fileblocks is achieved by appropriately linking the entries in the block table 144. The actual changeover between tape volumes may be automatic or effected by a central-station operator in response to an appropriate prompt generated by the tape-handler process.

To facilitate future usage of tape volumes, it is convenient to arrange the volumes in sets and to store on one volume of each set, the backup directories of all the PCs. These backup directories are arranged to be read off from the disc device 13 to a pre-designated area of the tape volume when the last volume of the volume set becomes full.

Claims

1. A personal-computer community comprising a plurality of independently-operable personal computers (PC 1-3), a central station (10), and a communications arrangement (11) communicating each personal computer (PC 1-3) with the central station (10), each personal computer (PC 1-3) being arranged to operate under a file-based operating system to store and retrieve working files from a non-volatile storage area (16) associated with that personal computer, the operating system maintaining a directory of said files and in order to provide a file backup facility for the personal computers:
   - the central station (10) is provided with a mass storage device(14),
   - each personal computer (PC 1-3) is operative
     a) in a backup mode, to enable user-selection of files for backup and to transmit the selected files to the central station (10), and
     b) in a restore mode, to enable user-selection of files to be restored from backup, to request and receive the files selected for restore from the central station (10), and to update the operating system file directory with an entry corresponding to each restored file; and
   - the central station (10) is arranged to store files transmitted thereto in said mass storage device (14) and to return selected files when so requested;

   said central station (10) comprising a multitasking computer characterized by being operative (12) to handle the file backup requirements of several said personal computers (PC 1-3) concurrently and to transfer files to said mass storage device (14) in the central station (10) in the form of blocks of data of predetermined maximum size, the central station (10) when backing up several personal computers concurrently, interleaving blocks from files of different personal computers (PC 1-3).

2. A personal-computer community according to claim 1, wherein said mass storage device is a tape device (14), the central station (10) further comprising a disc memory device (13) for buffering file block transfer to the tape device (14).

3. A personal-computer community according to claim 2, wherein for each personal computer (PC 1-3) requiring backup, the central station (10) is operative to run a respective backup task (143) for receiving file blocks from that personal computer and transferring them to said disc memory device (13); the central station (10) being further operative to run a tape handler process (142) for transferring file blocks from the disc memory device (13) to the tape device (14), the identity of file blocks to be transferred from the disc device (13) to the tape device (14) being held in a block table (144B) to which entries are added as a said backup task (143) transfers blocks to the disc device (13) and from which entries are cancelled upon transfer of said blocks from the disc device (13) to the tape device (14).

4. A personal-computer community according to claim 3, wherein the tape handler process (142) is arranged to defer transfer of file blocks held on the disc device (13) to the tape device (14) until a minimum amount of data is ready to be transferred, the tape handler process (142) ascertaining the amount of data to be transferred to the tape device (14) by referencing the block table (144B).

5. A personal-computer community according to claim 2, wherein for each personal computer (PC 1-3), a backup directory (30-33) of files backed up from that computer (PC 1-3) is maintained within the community, said backup directory (30-33) including information relating each file block of a backed up file to its position on the tape storage media of the device (14).

6. A personal-computer community according to claim 2, wherein the central station (10) is

arranged to handle file restoration to one personal computer (PC 1-3) only at a time, the file blocks of the files selected for restore being read off from the tape device (14) in the order in which they occur on tape (14) whereby to facilitate the tape read process.

7. A personal-computer community according to claims 5 and 6 in combination, wherein the order of occurrence on tape (14) of the file blocks to be restored is determined at the time of restore by reference to the relevant backup directory containing information on the tape position of the file blocks.

8. A personal-computer community according to claim 2, wherein for each personal computer (PC 1-3) a backup directory (30-33) of files backed up from that personal computer (PC 1-3) is maintained within said community, the arrangement being such that when in its restore mode, each personal computer (PC 1-3) has its backup directory (30-33) present and is operative to display the contents thereof to the user for selection.

9. A personal-computer community according to claim 2, wherein for each personal computer (PC 1-3), a backup directory (30-33) of files backed up from that personal computer (PC 1-3) is maintained within said community, the directory (30-33) for each personal computer (PC 1-3) including version data of each file at backup; the arrangement being such that when in its backup mode, each personal computer (PC 1-3) has its backup directory (30-33) present and is operative to compare information on the operating-system files selected for backup with the information in said backup directory (30-33) and to backup only those files which either do not appear in the backup directory (30-33) or have different version data.

10. A personal-computer community according to claim 8 or 9, wherein the central station (10) is arranged to keep said backup directories (30-33) on said disc device (13), the central station (10) being further arranged to pass a copy of the backup directory (30-33) relevant to a particular personal computer (PC 1-3) to that personal computer (PC 1-3) upon request therefrom, and each personal computer (PC 1-3) being operative to request the central station (10) to forward the relevant backup directory (30-33) where the latter is not present in the personal computer when it is to operate in a said mode requiring its backup directory (30-33) to be present.

11. A personal-computer community according to claim 10, wherein the request from a personal computer (PC 1-3) for a copy of its backup directory (30-33) is given priority by the central station (10) over any current backup or restore operations.

Revendications

1. Communauté d'ordinateurs personnels, comprenant une pluralité d'ordinateurs personnels (PC1-3) utilisables individuellement, un poste central (10) et un système de communication (11) faisant communiquer chaque ordinateur personnel (PC1-3) avec le poste central (10), chaque ordinateur personnel (PC1-3) étant agencé pour fonctionner sous un système d'exploitation à base de fichiers en vue du stockage et de l'extraction de fichiers de travail d'une zone de mémoire rémanente (16) associée à cet ordinateur personnel, le système d'exploitation maintenant un répertoire de ces fichiers et, dans le but de fournir un moyen de sauvegarde de fichiers pour les ordinateurs personnels:

- le poste central (10) est pourvu d'une mémoire de grande capacité (14),
- chaque ordinateur personnel (PC1-3 est opérationnel
  a) dans un mode de sauvegarde afin de permettre la sélection par l'utilisateur de fichiers pour la sauvegarde et pour transmettre les fichiers sélectionnés au poste central (10), et
  b) dans un mode de restauration afin de permettre la sélection par l'utilisateur de fichiers à restaurer depuis la sauvegarde, pour demander et recevoir les fichiers sélectionnés à restaurer du poste central (10) et pour actualiser le répertoire de fichiers du système d'exploitation par un article correspondant à chaque fichier restauré; et
- le poste central (10) est agencé pour stocker les fichiers qui lui sont transmis dans la mémoire de grande capacité (14) et pour retourner les fichiers sélectionnés lorsqu'il en reçoit la demande;

le poste central (10) comprenant un ordinateur à tâches multiples, caractérisé en ce qu'il est opérationnel (12) pour traiter simultanément les besoins de sauvegarde de fichiers de plusieurs ordinateurs personnels (PC1-3) et pour transférer des fichiers à la mémoire de grande capacité (14) au poste central (10) sous la forme de blocs de données de taille maximale prédéterminée, le poste central (10), lors de la sauvegarde simultanée de fichiers de plusieurs ordi-

nateurs personnels, imbriquant des blocs de fichiers de différents ordinateurs personnels (PC1-3).

2. Communauté d'ordinateurs personnels selon la revendication 1, dans laquelle la mémoire de grande capacité est un dispositif à bande (14), le poste central (10) comprenant en outre une mémoire à disque (13) pour la mémorisation temporaire de blocs de fichiers lors de leur transfert au dispositif à bande (14).

3. Communauté d'ordinateurs personnels selon la revendication 2, dans laquelle, pour chaque ordinateur personnel (PC1-3) nécessitant une sauvegarde, le poste central (10) est opérationnel pour exécuter une tâche de sauvegarde (143) respective pour la réception de blocs de fichiers de cet ordinateur personnel et leur transfert à la mémoire à disques (13); le poste central (10) étant en outre opérationnel pour exécuter un processus de manipulation de bande (142) en vue du transfert de blocs de fichiers de la mémoire à disque (13) au dispositif à bande (14), l'identité des blocs de fichiers à transférer de la mémoire à disque (13) au dispositif à bande (14) étant conservée dans une table de blocs (144b), à la laquelle sont ajoutés des articles lorsque la tâche de sauvegarde (143) transfère des blocs à la mémoire à disque (13) et de laquelle des articles sont supprimés lors du transfert de blocs de la mémoire à disque (13) au dispositif à bande (14).

4. Communauté d'ordinateurs personnels selon la revendication 3, dans laquelle le processus de manipulation de bande (142) est agencé pour différer le transfert de blocs de fichiers contenus dans la mémoire à disque (13) au dispositif à bande (14) jusqu'à ce qu'une quantité minimale de données soit prête à être transférée, le processus de manipulation de bande (142) déterminant la quantité de données à transférer au dispositif à bande (14) en consultant la table de blocs (144b).

5. Communauté d'ordinateurs personnels selon la revendication 2, dans laquelle, pour chaque ordinateur personnel (PC1-3), un répertoire de sauvegarde (30-33) de fichiers sauvegardés provenant de cet ordinateur (PC1-3) est maintenu dans la communauté, ce répertoire de sauvegarde (30-33) contenant de l'information indiquant la relation entre chaque bloc d'un fichier sauvegardé et sa position sur le support d'enregistrement du dispositif à bande (14).

6. Communauté d'ordinateurs personnels selon la revendication 2, dans laquelle le poste central (10) est agencé pour traiter la restauration de fichiers à seulement un ordinateur personnel (PC1-3) à la fois, les blocs des fichiers sélectionnés pour la restauration étant lus sur le dispositif à bande (14) dans l'ordre où ils apparaissent sur la bande (14), de manière à faciliter le processus de lecture de la bande.

7. Communauté d'ordinateurs personnels selon les revendications 5 et 6 prises ensemble, dans laquelle l'ordre d'apparition sur la bande (14) des blocs de fichiers à restaurer est déterminé, au moment de la restauration, par la consultation du répertoire de sauvegarde concerné, contenant l'information relative à la position des blocs de fichiers sur la bande.

8. Communauté d'ordinateurs personnels selon la revendication 2, dans laquelle, pour chaque ordinateur personnel (PC1-3), un répertoire de sauvegarde (30-33) de fichiers sauvegardés provenant de cet ordinateur personnel (PC1-3) est maintenu dans cette communauté, l'agencement étant tel que lorsqu'il est dans son mode de restauration, chaque ordinateur personnel (PC1-3) a son répertoire de sauvegarde (30-33) présent et est opérationnel pour afficher le contenu de ce répertoire en vue de la sélection par l'utilisateur.

9. Communauté d'ordinateurs personnels selon la revendication 2, dans laquelle, pour chaque ordinateur personnel (PC1-3), un répertoire de sauvegarde (30-33) de fichiers sauvegardés provenant de cet ordinateur personnel (PC1-3) est maintenu dans la communauté, le répertoire (30-33) pour chaque ordinateur personnel (PC1-3) contenant des données relatives à la version de chaque fichier sauvegardé; l'agencement étant tel que lorsqu'il est dans son mode de sauvegarde, chaque ordinateur personnel (PC1-3) a son répertoire de sauvegarde (30-33) présent et est opérationnel pour comparer l'information sur les fichiers du système d'exploitation sélectionnés pour être sauvegardés avec l'information contenue dans le répertoire de sauvegarde, et pour sauvegarder seulement les fichiers qui, soit n'apparaissent pas dans le répertoire de sauvegarde (30-33), soit ont des données de version différentes.

10. Communauté d'ordinateurs personnels selon la revendication 8 ou 9, dans laquelle le poste central (10) est agencé pour conserver les répertoires de sauvegarde (30-33) dans la mémoire à disque (13), le poste central (10) étant

agencé en outre pour transmettre une copie du répertoire de sauvegarde (30-33) se rapportant à un ordinateur personnel (PC1-3) particulier à cet ordinateur personnel (PC1-3) lorsqu'il en reçoit la demande de celui-ci, et chaque ordinateur personnel (PC1-3) étant opérationnel pour demander au poste central (10) de lui faire parvenir le répertoire de sauvegarde (30-33) se rapportant à lui au cas où ce répertoire n'est pas présent dans l'ordinateur personnel lorsqu'il doit fonctionner dans le mode nécessitant la présence de son répertoire de sauvegarde (30-33).

11. Communauté d'ordinateurs personnels selon la revendication 10, dans laquelle la demande émanant d'un ordinateur personnel (PC1-3) pour une copie de son répertoire de sauvegarde (30-33) est traitée par le poste central (10) avec priorité par rapport à toutes opérations de sauvegarde ou de restauration éventuellement en cours.

Patentansprüche

1. Eine Personal-Computer-Gemeinschaft mit einer Mehrzahl von unabhängig betreibbaren Personal-Computern (PC 1-3), einer Zentralstation (10) und einer Übertragungsanordnung (11) für die Datenübertragung zwischen jedem Personal-Computer (PC 1-3) und der Zentralstation (10), wobei jeder Personal-Computer (PC 1-3) angeordnet ist, um unter einem auf einer Datei basierenden Betriebssystem zum Speichern und Wiedergewinnen von Arbeitsdateien von einem nicht-flüchtigen Speicherbereich (16), der dem Personal-Computer zugeordnet ist, betrieben zu werden, wobei das Betriebssystem ein Verzeichnis der Dateien aufrechterhält und wobei zur Schaffung einer Dateisicherungsmöglichkeit für die Personal-Computer folgendes vorgesehen ist:

- die Zentralstation (10) hat ein Massenspeichergerät (14),
- jeder Personal-Computer (PC 1-3) ist betreibbar
  a) in einer Sicherungsbetriebsart, um eine Anwenderauswahl von Dateien für die Sicherung und für die Übertragung der ausgewählten Dateien zu der Zentralstation (10) zu ermöglichen, und
  b) in einer Umspeicherbetriebsart, um eine Anwenderauswahl von Dateien für eine Umspeicherung von der Sicherung zu ermöglichen, um die für die Umspeicherung ausgewählten Dateien von der Zentralstation (10) anzufordern und zu empfangen, und um das Betriebssystem-Dateiverzeichnis mit einem Eingang entsprechend einer jeden umgespeicherten Datei auf den neuesten Stand zu bringen; und
- die Zentraleinheit (10) ist angeordnet, um die zu dieser übertragenen Dateien in dem Massenspeichergerät (14) zu speichern und um ausgewählte Dateien bei Anforderung zurückzuschicken;

wobei die Zentralstation (10) einen Parallelverarbeitungs-Computer aufweist, dadurch gekennzeichnet, daß dieser betreibbar (12) ist, um die Dateisicherungsanforderungen der mehreren Personal-Computer (PC 1-3) gleichzeitig zu handhaben und um die Dateien zu dem Massenspeichergerät (14) in der Zentralstation (10) in der Form von Blöcken von Daten von vorbestimmter maximaler Größe zu übertragen, wobei die Zentralstation (10) bei der gleichzeitigen Rücksicherung für verschiedene Personal-Computer Blöcke der Dateien von unterschiedlichen Personal-Computern (PC 1-3) verschachtelt.

2. Eine Personal-Computer-Gemeinschaft gemäß Anspruch 1, bei der das Massenspeichergerät ein Bandgerät (14) ist, wobei die Zentralstation (10) ferner ein Plattenspeichergerät (13) zum Puffern der Dateiblockübertragung zu dem Bandgerät (14) umfaßt.

3. Eine Personal-Computer-Gemeinschaft gemäß Anspruch 2, bei der die Zentralstation (10) für jeden Personal-Computer (PC 1-3), der eine Sicherung erfordert, betreibbar ist, um eine jeweilige Sicherungsanforderung (143) zum Empfangen von Dateiblöcken von dem Personal-Computer und zum Übertragen derselben zu dem Plattenspeichergerät (13) zu bearbeiten, wobei die Zentralstation (10) ferner betreibbar ist, um einen Bandhandhabungsprozeß (142) zum Übertragen von Dateiblöcken von dem Plattenspeichergerät (13) zu dem Bandgerät (14) zu verarbeiten, wobei die Identität der Dateiblöcke, die von dem Plattengerät (13) zu dem Bandgerät (14) zu übertragen sind, in einer Blocktabelle (144B) gehalten wird, zu der Eingänge zugefügt werden, wenn die Sicherungsanforderung (143) Blöcke zu dem Plattengerät (13) überträgt und von der Eingänge beseitigt werden, wenn die Blöcke von dem Plattengerät (13) zu dem Bandgerät (14) übertragen werden.

4. Eine Personal-Computer-Gemeinschaft gemäß Anspruch 3, bei der der Bandhandhabungspro-

zeß (142) angeordnet ist, um eine Übertragung von Dateiblöcken, die auf dem Plattengerät (13) gespeichert sind, zu dem Bandgerät (14) zu verzögern, bis eine minimale Datenmenge für die Übertragung bereitsteht, wobei der Bandhandhabungsprozeß (142) die zu übertragende Datenmenge zu dem Bandgerät (14) durch Bezugnahme auf die Blocktabelle (144B) sicherstellt.

5. Eine Personal-Computer-Gemeinschaft gemäß Anspruch 2, bei der für jeden Personal-Computer (PC 1-3) ein Sicherungsverzeichnis (30-33) der von dem Computer (PC 1-3) gesicherten Dateien innerhalb der Gemeinschaft aufrechterhalten wird, wobei das Sicherungsverzeichnis (30-33) Informationen bezüglich jedes Dateiblockes einer gesicherten Datei bezüglich ihrer Lage auf dem Bandspeichermedium des Gerätes (14) umfaßt.

6. Eine Personal-Computer-Gemeinschaft gemäß Anspruch 2, bei der die Zentralstation (10) angeordnet ist, um eine Dateiumspeicherung zu einem einzigen Personal-Computer (PC 1-3) zu einem Zeitpunkt zu handhaben, wobei die Dateiblöcke der ausgewählten Dateien für die Umspeicherung von dem Bandgerät (14) in der Reihenfolge ausgelesen werden, in der sie auf dem Band (14) auftreten, um dadurch den Bandausleseprozeß zu erleichtern.

7. Eine Personal-Computer-Gemeinschaft gemäß Anspruch 5 und 6 in Kombination miteinander, bei der die Reihenfolge des Auftretens der umzuspeichernden Dateiblöcke auf dem Band (14) zu dem Zeitpunkt der Umspeicherung durch Bezugnahme auf das relevante Sicherungsverzeichnis ermittelt wird, welches Informationen über die Bandlage der Dateiblöcke enthält.

8. Eine Personal-Computer-Gemeinschaft gemäß Anspruch 2, bei dem innerhalb der Gemeinschaft für jeden Personal-Computer (PC 1-3) ein Sicherungsverzeichnis (30-33) der von diesem Personal-Computer (PC 1-3) gesicherten Dateien aufrechterhalten wird, wobei die Anordnung derartig ist, daß jeder Personal-Computer (PC 1-3) bei seiner Umspeicherungsbetriebsweise sein Sicherungsverzeichnis (30-33) vorliegen hat und betätigbar ist, um die Inhalte desselben für den Anwender zur Auswahl anzuzeigen.

9. Eine Personal-Computer-Gemeinschaft gemäß Anspruch 2, bei der für jeden Personal-Computer (PC 1-3) ein Sicherungsverzeichnis (30-33) von Dateien, welche von diesem Personal-Computer (PC 1-3) gesichert sind, innerhalb der Gemeinschaft aufrechterhalten wird, wobei das Verzeichnis (30-33) für jeden Personal-Computer (PC 1-3) für jede gesicherte Datei Daten bezüglich der Version aufweist; wobei die Anordnung derartig ist, daß jeder Personal-Computer (PC 1-3) während seiner Sicherungsbetriebsart sein Sicherungsverzeichnis (30-33) vorliegen hat und betätigbar ist, um Informationen auf Betriebssystem-Dateien, welche zur Sicherung ausgewählt sind, mit Informationen in dem Sicherungsverzeichnis (30-33) zu vergleichen und um lediglich solche Dateien zu sichern, die entweder nicht in der Sicherungsdatei (30-33) erscheinen oder abweichende Daten bezüglich der Version haben.

10. Eine Personal-Computer-Gemeinschaft gemäß Anspruch 8 oder 9, bei der die Zentralstation (10) angeordnet ist, um die Sicherungsverzeichnisse (30-33) auf dem Plattengerät (13) zu halten, wobei die Zentralstation (10) ferner angeordnet ist, um eine Kopie des Sicherungsverzeichnisses (30-33), das für einen speziellen Personal-Computer (PC 1-3) relevant ist, zu diesem Personal-Computer (PC 1-3) auf dessen Anforderung hin weiterzuleiten, und daß jeder Personal-Computer (PC 1-3) für eine Anforderung an die Zentralstation (10) betätigbar ist, so daß diese das relevante Sicherungsverzeichnis (30-33) weiterleitet, wo das letztgenannte nicht in dem Personal-Computer gegenwärtig ist und wo dieser in der Betriebsart zu betätigen ist, die das Vorliegen seines Sicherungsverzeichnisses (30-33) erfordert.

11. Eine Personal-Computer-Gemeinschaft gemäß Anspruch 10, bei der die Anforderung von einem Personal-Computer (PC 1-3) für eine Kopie seines Sicherungsverzeichnisses (30-33) durch die Zentralstation (10) prioritätsmäßig bevorzugt gegenüber jeglichen momentanen Sicherungsoder Umspeicherungs-Operationen behandelt wird.

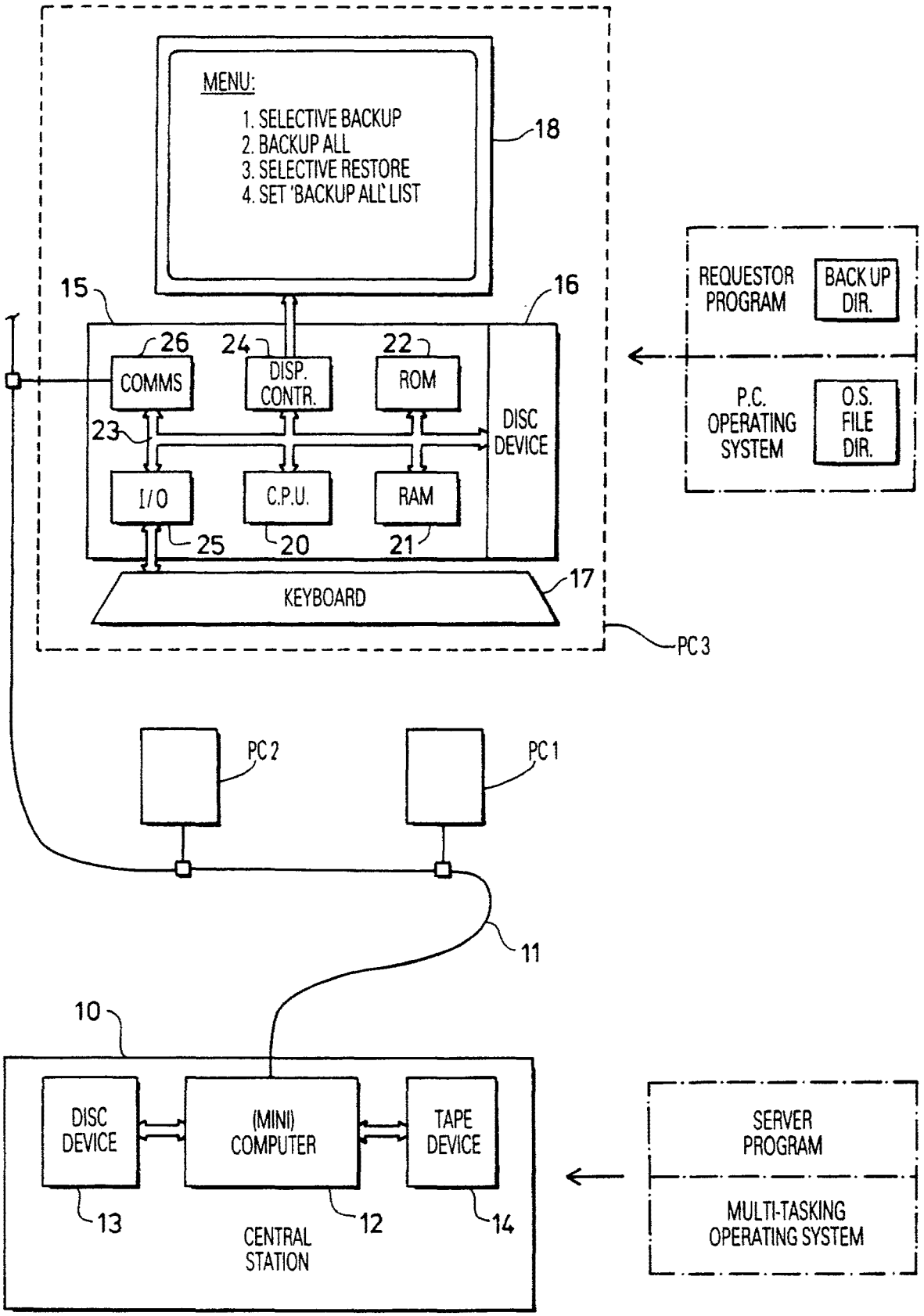

MENU:
1. SELECTIVE BACKUP
2. BACKUP ALL
3. SELECTIVE RESTORE
4. SET 'BACKUP ALL' LIST
18
15
16
26
24
22
COMMS
DISP. CONTR.
ROM
23
DISC DEVICE
I/O
C.P.U.
RAM
25
20
21
KEYBOARD
17
PC 3
REQUESTOR PROGRAM
BACK UP DIR.
P.C. OPERATING SYSTEM
O.S. FILE DIR.
PC 2
PC 1
11
10
DISC DEVICE
(MINI) COMPUTER
TAPE DEVICE
13
12
14
CENTRAL STATION
SERVER PROGRAM
MULTI-TASKING OPERATING SYSTEM

FIG 2

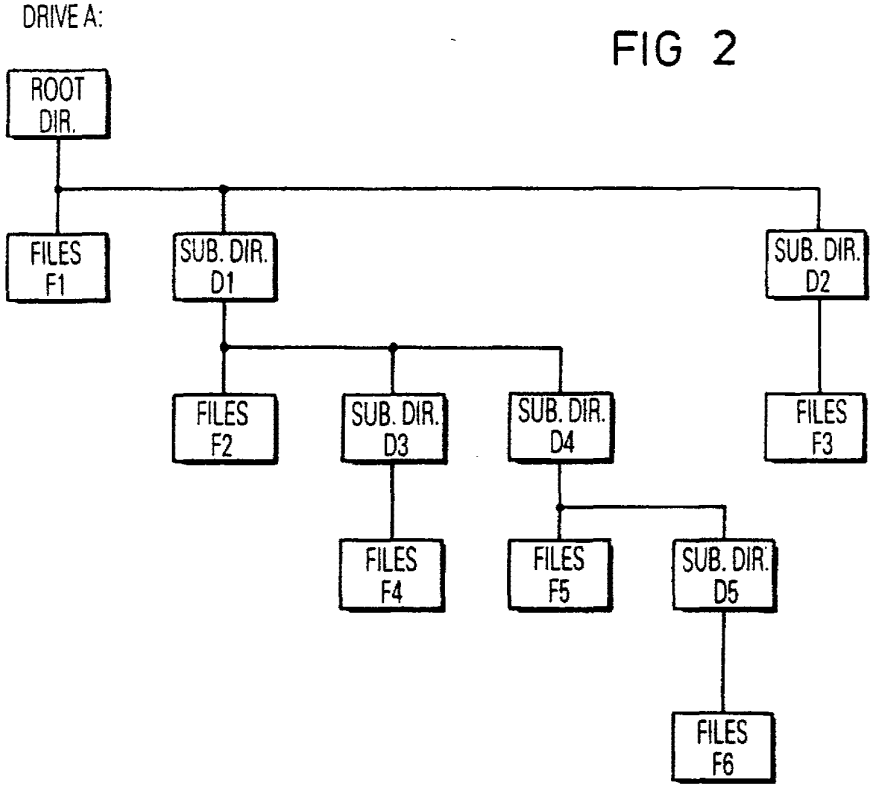

DRIVE A:
ROOT DIR.
FILES F1
SUB. DIR. D1
SUB. DIR. D2
FILES F2
SUB. DIR. D3
SUB. DIR. D4
FILES F3
FILES F4
FILES F5
SUB. DIR. D5
FILES F6

FIG 5

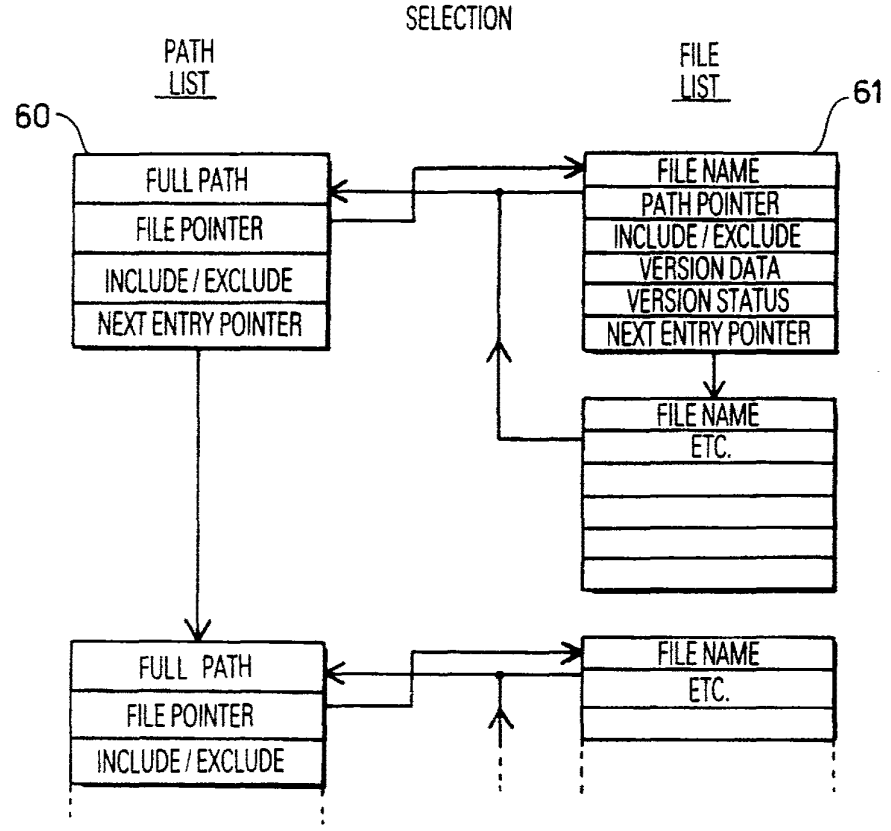

SELECTION
PATH LIST
FILE LIST
60
61
FULL PATH
FILE POINTER
INCLUDE / EXCLUDE
NEXT ENTRY POINTER
FILE NAME
PATH POINTER
INCLUDE / EXCLUDE
VERSION DATA
VERSION STATUS
NEXT ENTRY POINTER
FILE NAME
ETC.
FULL PATH
FILE POINTER
INCLUDE / EXCLUDE
FILE NAME
ETC.

FIG 3

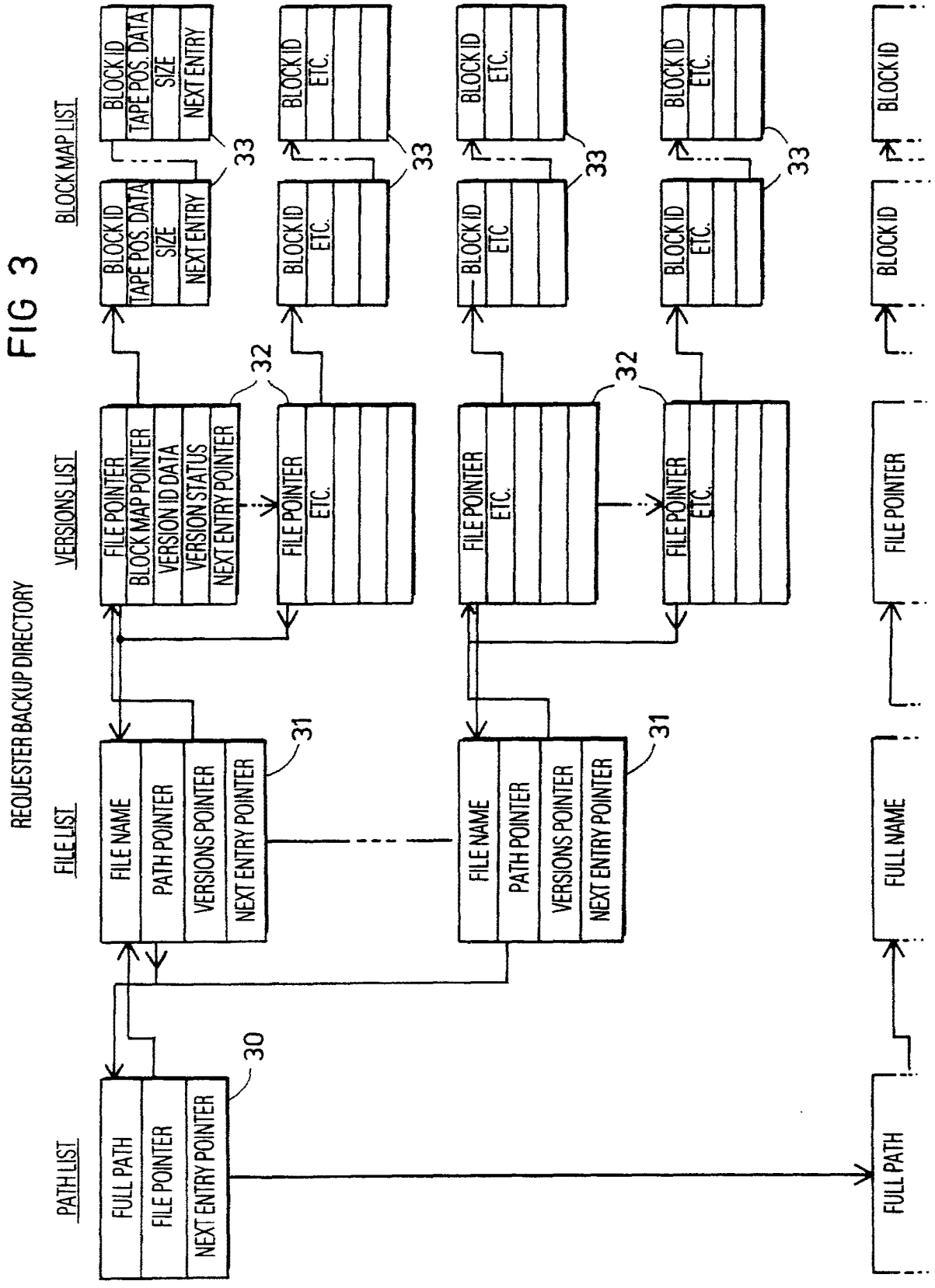

REQUESTER BACKUP DIRECTORY
PATH LIST
FULL PATH
FILE POINTER
NEXT ENTRY POINTER
30
FILE LIST
FILE NAME
PATH POINTER
VERSIONS POINTER
NEXT ENTRY POINTER
31
VERSIONS LIST
FILE POINTER
BLOCK MAP POINTER
VERSION ID DATA
VERSION STATUS
NEXT ENTRY POINTER
ETC.
32
BLOCK MAP LIST
BLOCK ID
TAPE POS. DATA
SIZE
NEXT ENTRY
ETC.
33
FULL PATH
FULL NAME

FIG 4

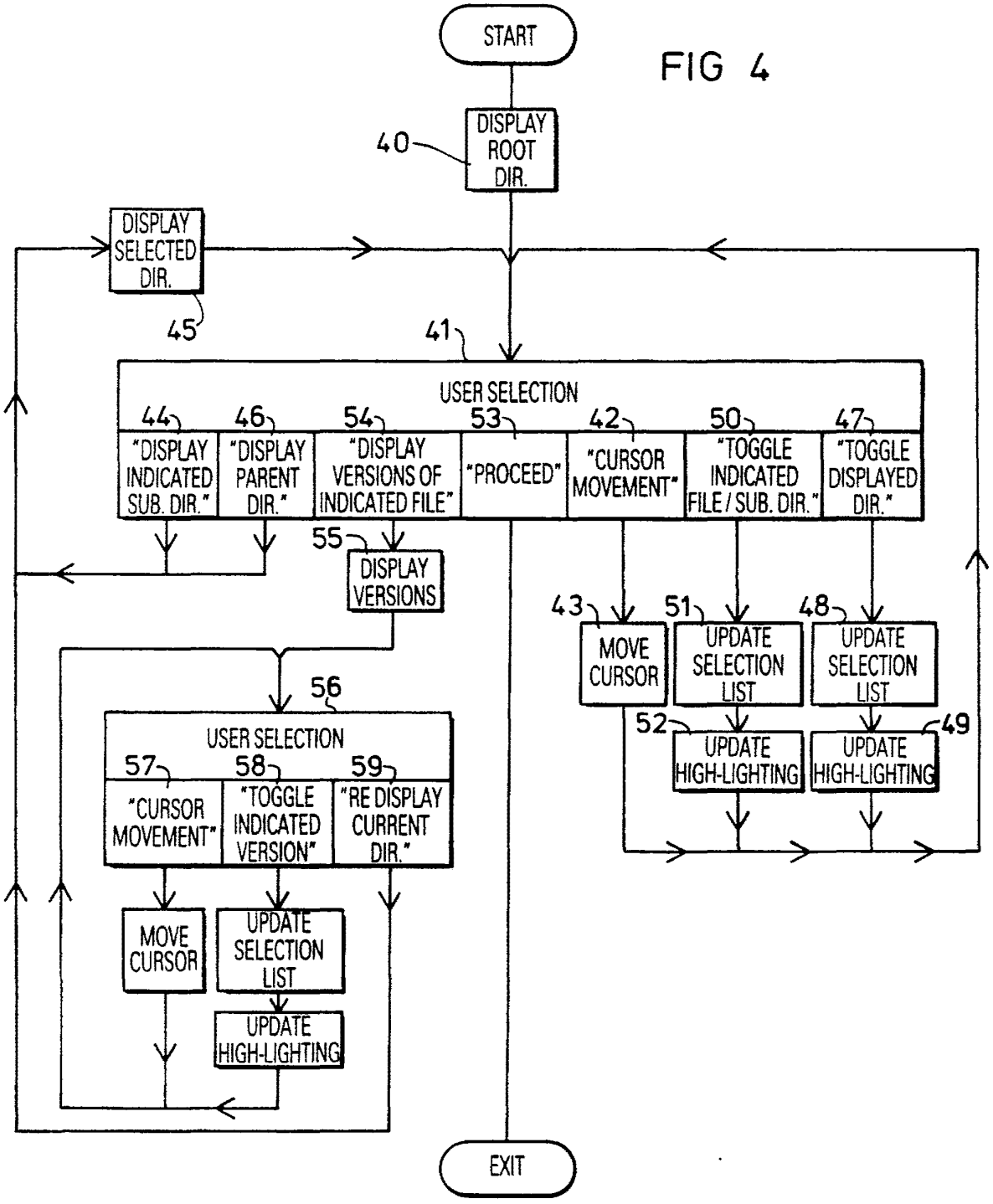

START
DISPLAY ROOT DIR.
40
DISPLAY SELECTED DIR.
45
41
USER SELECTION
44
"DISPLAY INDICATED SUB. DIR."
46
"DISPLAY PARENT DIR."
54
"DISPLAY VERSIONS OF INDICATED FILE"
53
"PROCEED"
42
"CURSOR MOVEMENT"
50
"TOGGLE INDICATED FILE / SUB. DIR."
47
"TOGGLE DISPLAYED DIR."
55
DISPLAY VERSIONS
43
MOVE CURSOR
51
UPDATE SELECTION LIST
48
UPDATE SELECTION LIST
52
UPDATE HIGH-LIGHTING
49
UPDATE HIGH-LIGHTING
56
USER SELECTION
57
"CURSOR MOVEMENT"
58
"TOGGLE INDICATED VERSION"
59
"RE DISPLAY CURRENT DIR."
MOVE CURSOR
UPDATE SELECTION LIST
UPDATE HIGH-LIGHTING
EXIT

FIG 6

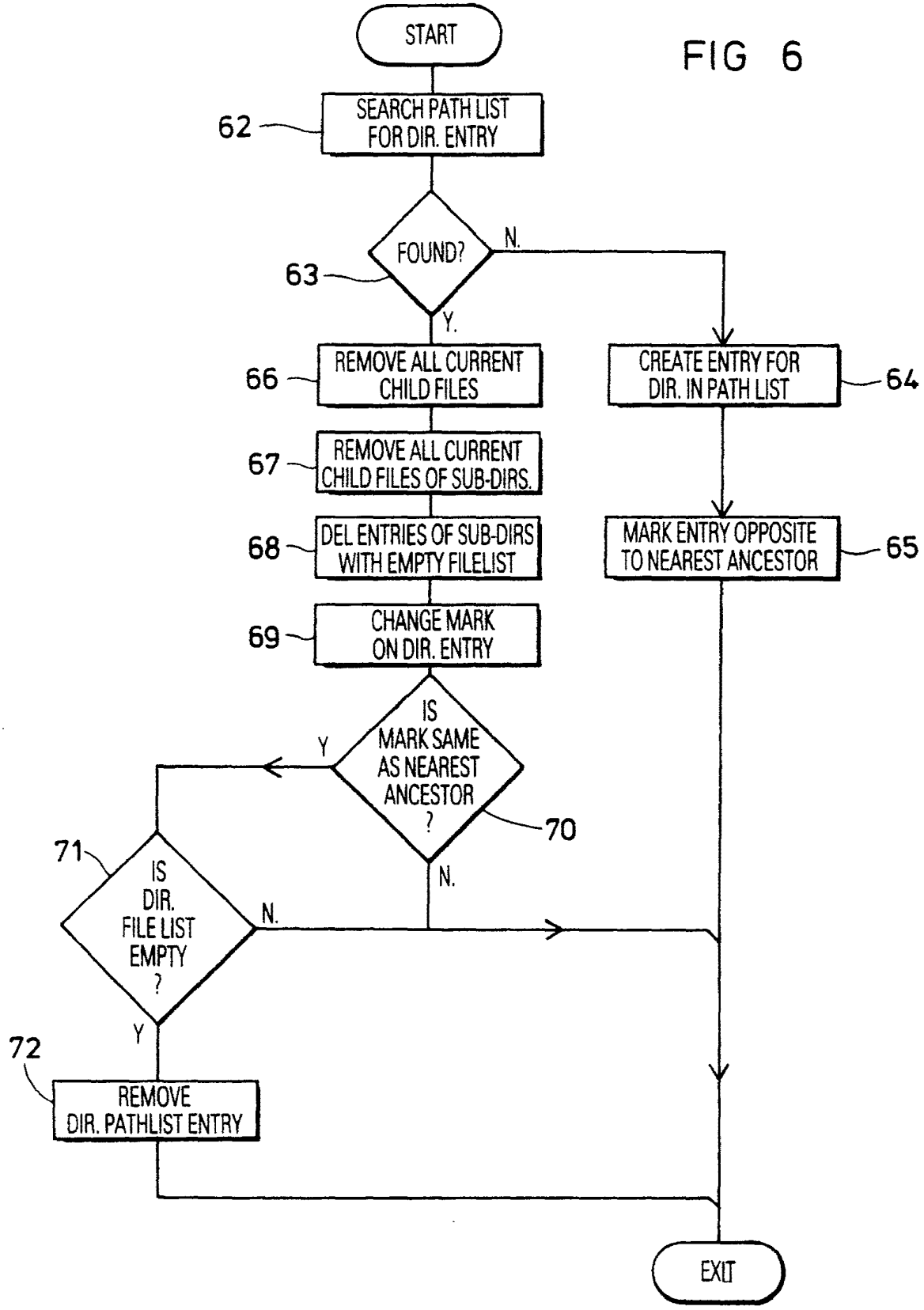

START
SEARCH PATH LIST FOR DIR. ENTRY
62
FOUND?
63
N.
Y.
CREATE ENTRY FOR DIR. IN PATH LIST
64
REMOVE ALL CURRENT CHILD FILES
66
REMOVE ALL CURRENT CHILD FILES OF SUB-DIRS.
67
DEL ENTRIES OF SUB-DIRS WITH EMPTY FILELIST
68
MARK ENTRY OPPOSITE TO NEAREST ANCESTOR
65
CHANGE MARK ON DIR. ENTRY
69
IS MARK SAME AS NEAREST ANCESTOR ?
70
Y
N.
IS DIR. FILE LIST EMPTY ?
71
N.
Y
REMOVE DIR. PATHLIST ENTRY
72
EXIT

FIG 7

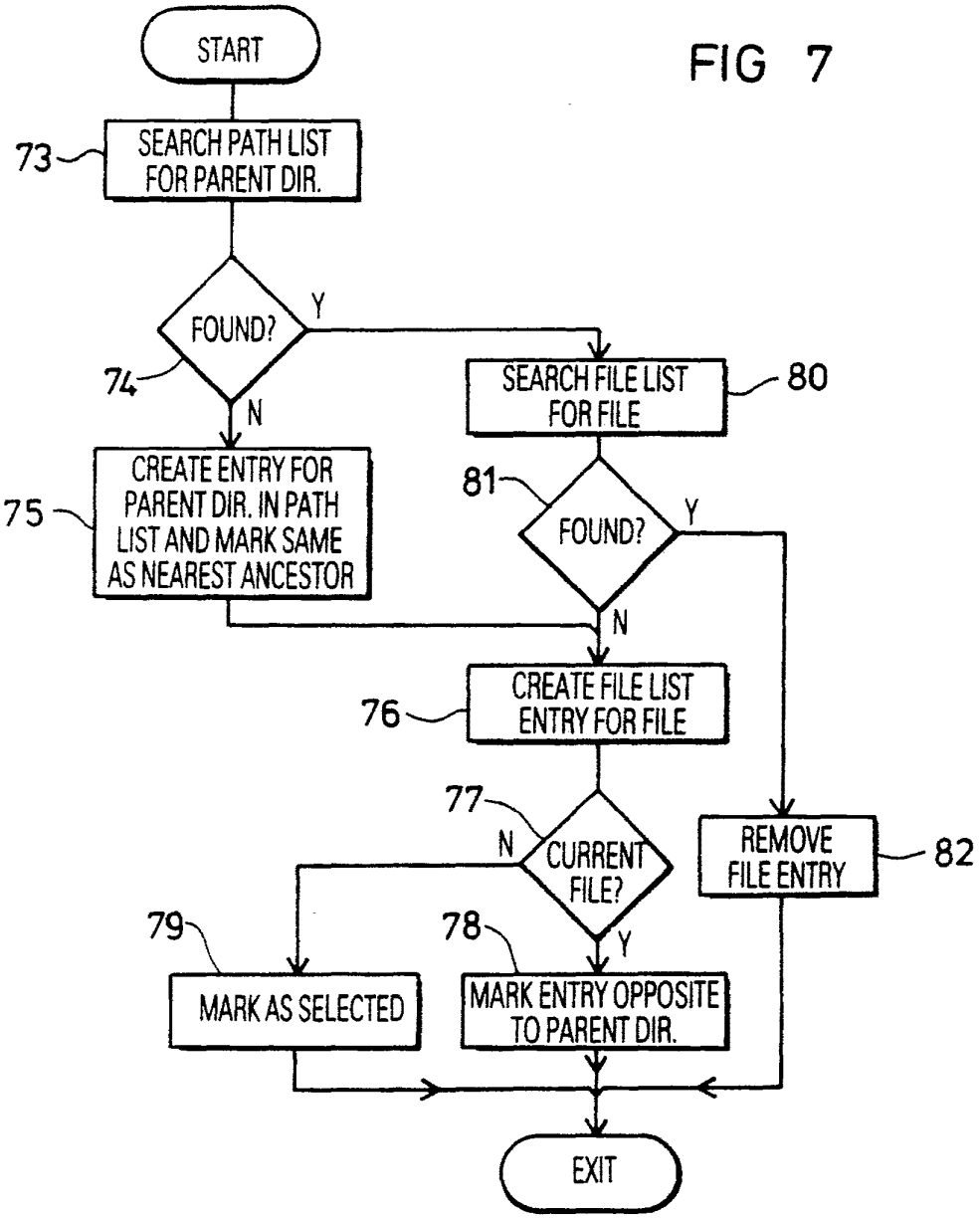
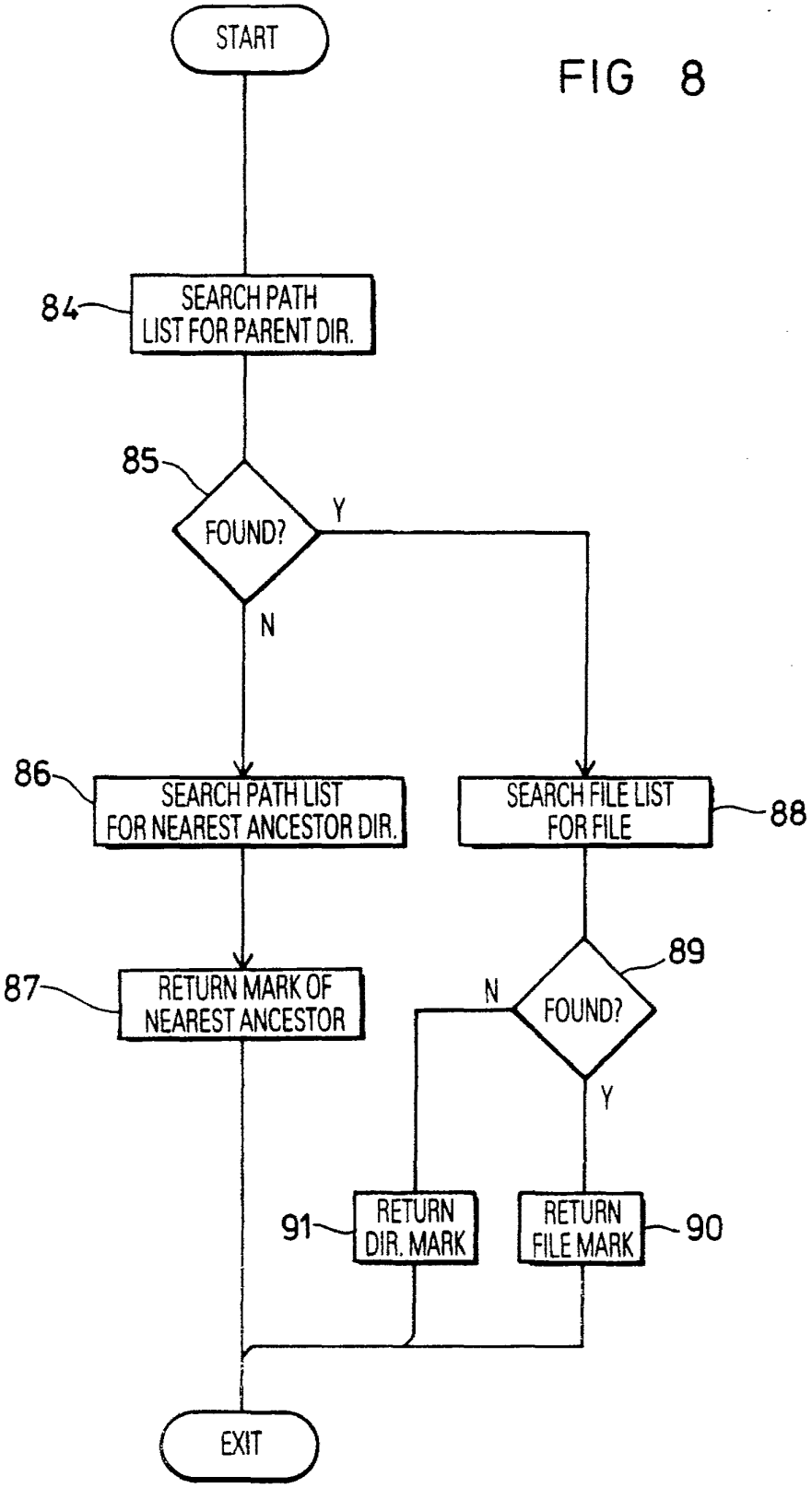

START
73
SEARCH PATH LIST FOR PARENT DIR.
FOUND?
Y
74
N
SEARCH FILE LIST FOR FILE
80
CREATE ENTRY FOR PARENT DIR. IN PATH LIST AND MARK SAME AS NEAREST ANCESTOR
75
81
FOUND?
Y
N
CREATE FILE LIST ENTRY FOR FILE
76
77
N
CURRENT FILE?
REMOVE FILE ENTRY
82
79
78
Y
MARK AS SELECTED
MARK ENTRY OPPOSITE TO PARENT DIR.
EXIT

FIG 8


START
84
SEARCH PATH LIST FOR PARENT DIR.
85
FOUND?
Y
N
86
SEARCH PATH LIST FOR NEAREST ANCESTOR DIR.
87
RETURN MARK OF NEAREST ANCESTOR
SEARCH FILE LIST FOR FILE
88
89
FOUND?
N
Y
91
RETURN DIR. MARK
RETURN FILE MARK
90
EXIT

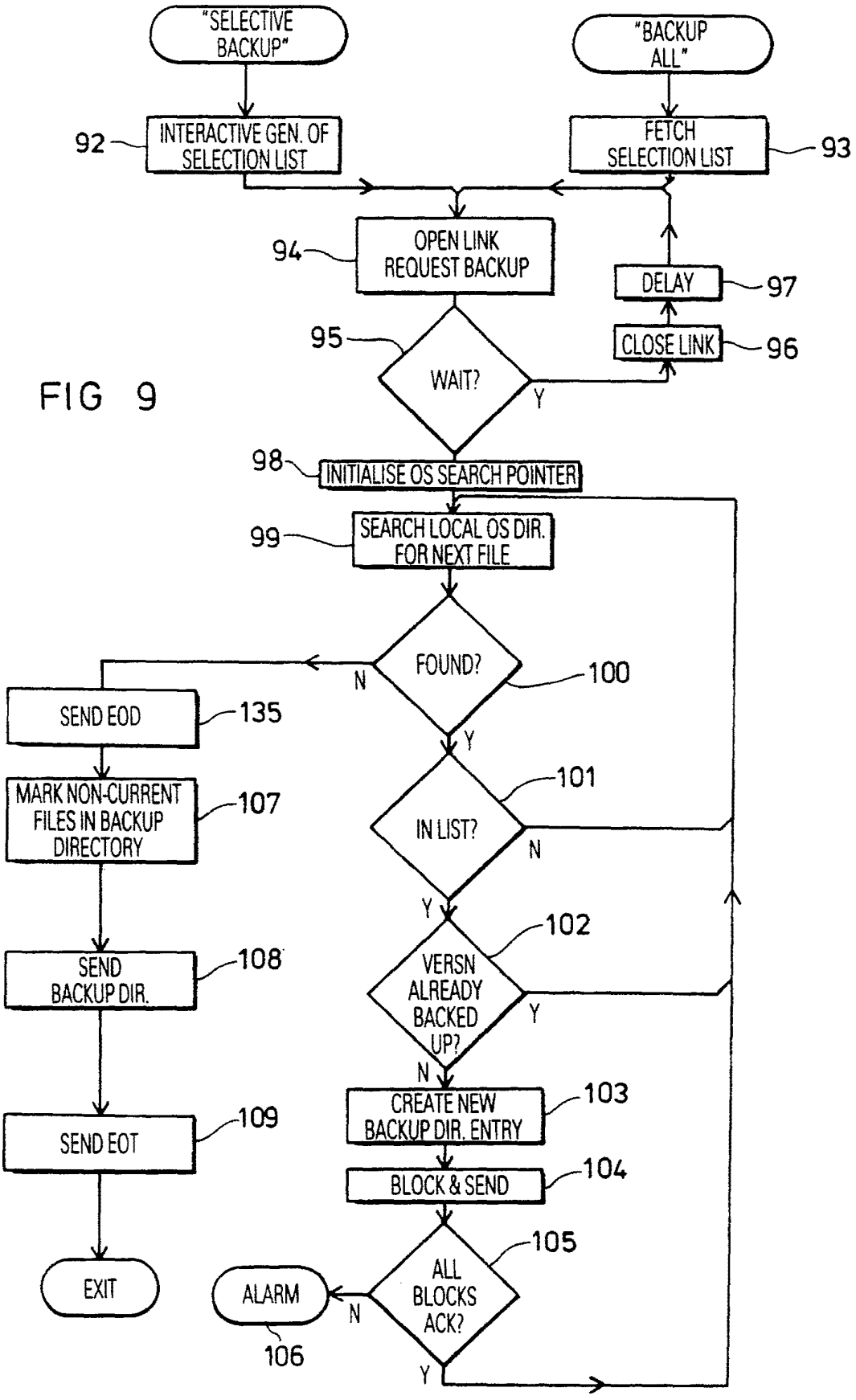

"SELECTIVE BACKUP"
"BACKUP ALL"
92
INTERACTIVE GEN. OF SELECTION LIST
FETCH SELECTION LIST
93
94
OPEN LINK REQUEST BACKUP
DELAY
97
95
WAIT?
CLOSE LINK
96
Y
98
INITIALISE OS SEARCH POINTER
99
SEARCH LOCAL OS DIR. FOR NEXT FILE
FOUND?
100
N
Y
SEND EOD
135
101
IN LIST?
MARK NON-CURRENT FILES IN BACKUP DIRECTORY
107
N
Y
102
SEND BACKUP DIR.
108
VERSN ALREADY BACKED UP?
Y
N
SEND EOT
109
CREATE NEW BACKUP DIR. ENTRY
103
BLOCK & SEND
104
105
EXIT
ALARM
ALL BLOCKS ACK?
N
106
Y

FIG 9

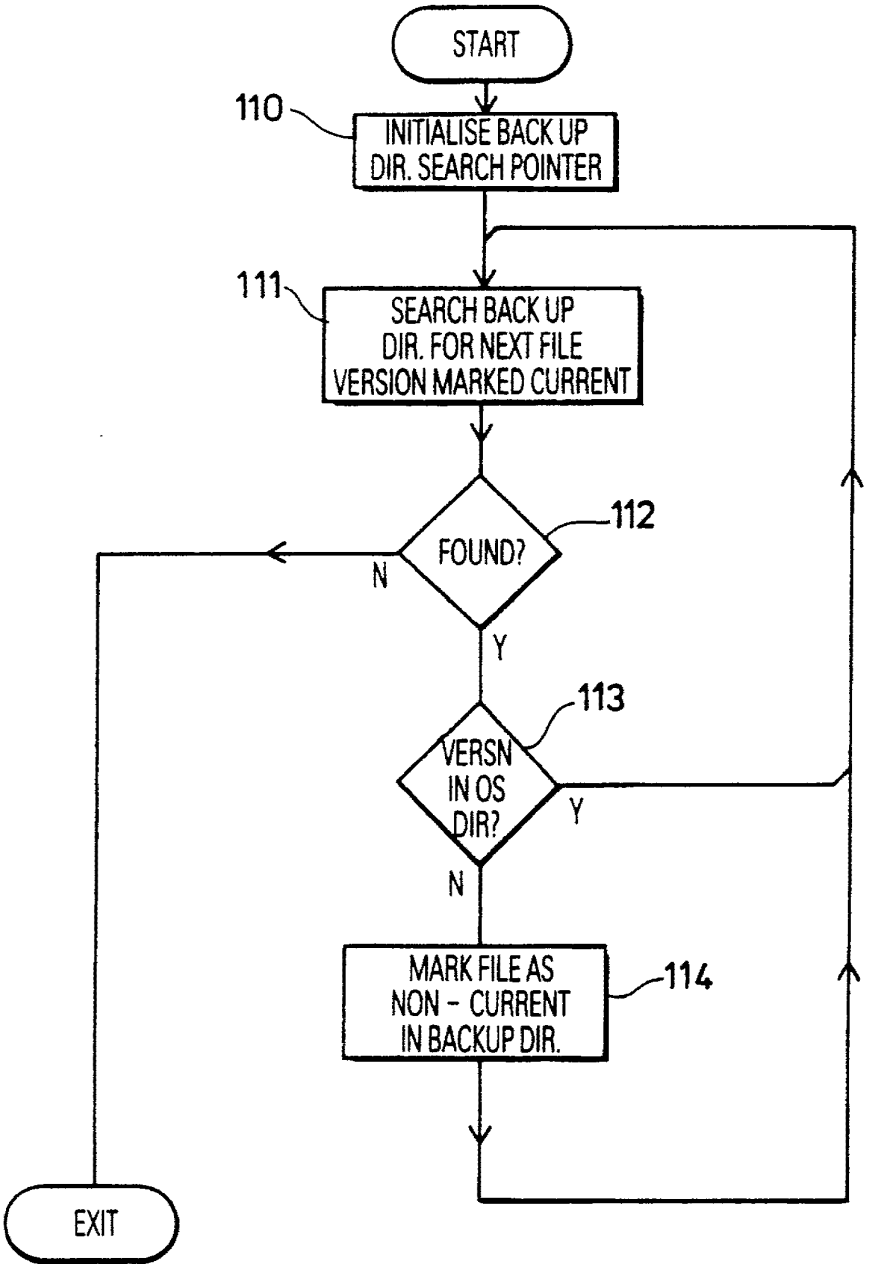
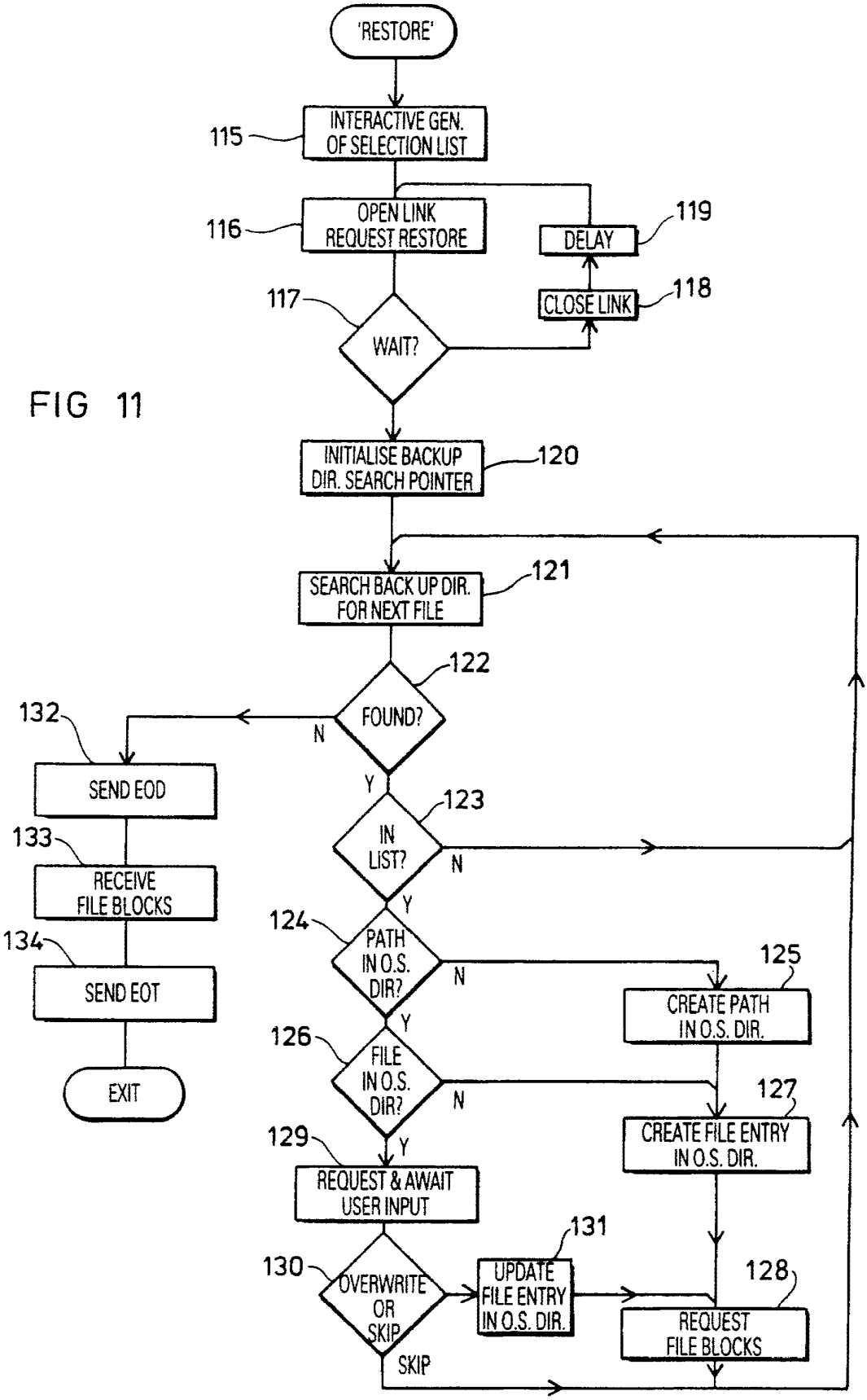

START
110
INITIALISE BACK UP DIR. SEARCH POINTER
111
SEARCH BACK UP DIR. FOR NEXT FILE VERSION MARKED CURRENT
FOUND?
112
N
Y
113
VERSN IN OS DIR?
Y
N
MARK FILE AS NON - CURRENT IN BACKUP DIR.
114
EXIT

FIG 10

FIG 11


'RESTORE'
INTERACTIVE GEN. OF SELECTION LIST
115
OPEN LINK REQUEST RESTORE
116
DELAY
119
CLOSE LINK
118
117
WAIT?
INITIALISE BACKUP DIR. SEARCH POINTER
120
SEARCH BACK UP DIR. FOR NEXT FILE
121
FOUND?
122
N
Y
132
SEND EOD
133
RECEIVE FILE BLOCKS
134
SEND EOT
EXIT
IN LIST?
123
N
Y
PATH IN O.S. DIR?
124
N
Y
125
CREATE PATH IN O.S. DIR.
FILE IN O.S. DIR?
126
N
Y
127
CREATE FILE ENTRY IN O.S. DIR.
129
REQUEST & AWAIT USER INPUT
131
OVERWRITE OR SKIP
130
UPDATE FILE ENTRY IN O.S. DIR.
128
REQUEST FILE BLOCKS
SKIP

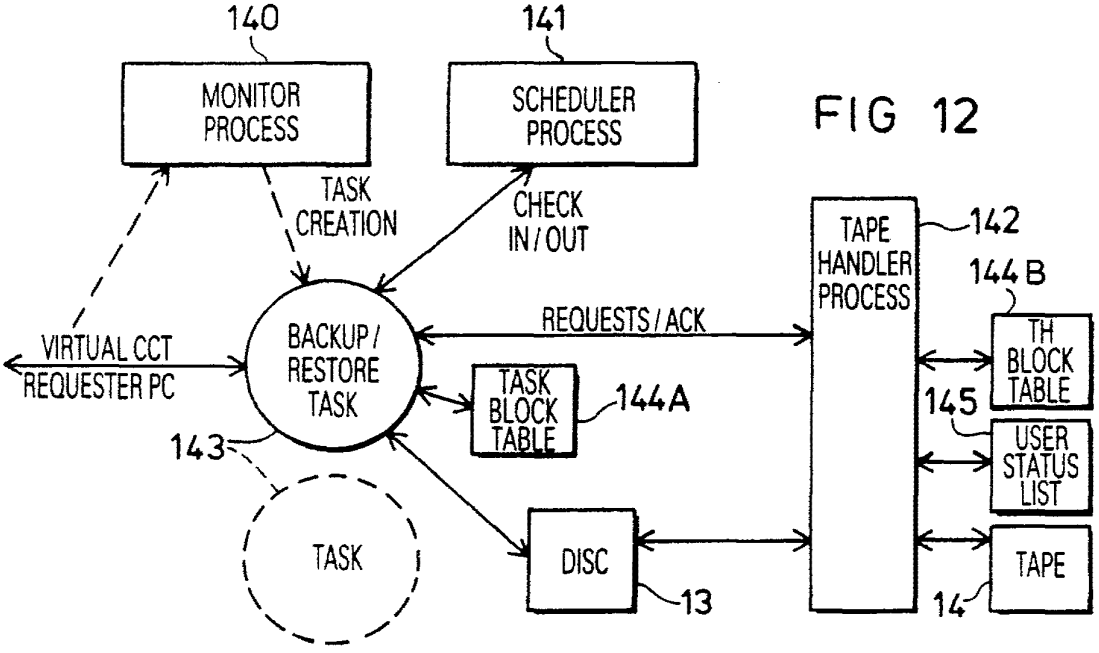

140
MONITOR PROCESS
141
SCHEDULER PROCESS
TASK CREATION
CHECK IN / OUT
TAPE HANDLER PROCESS
142
144 B
TH BLOCK TABLE
REQUESTS / ACK
VIRTUAL CCT REQUESTER PC
BACKUP / RESTORE TASK
TASK BLOCK TABLE
144A
145
USER STATUS LIST
143
TASK
DISC
13
TAPE
14

FIG 12

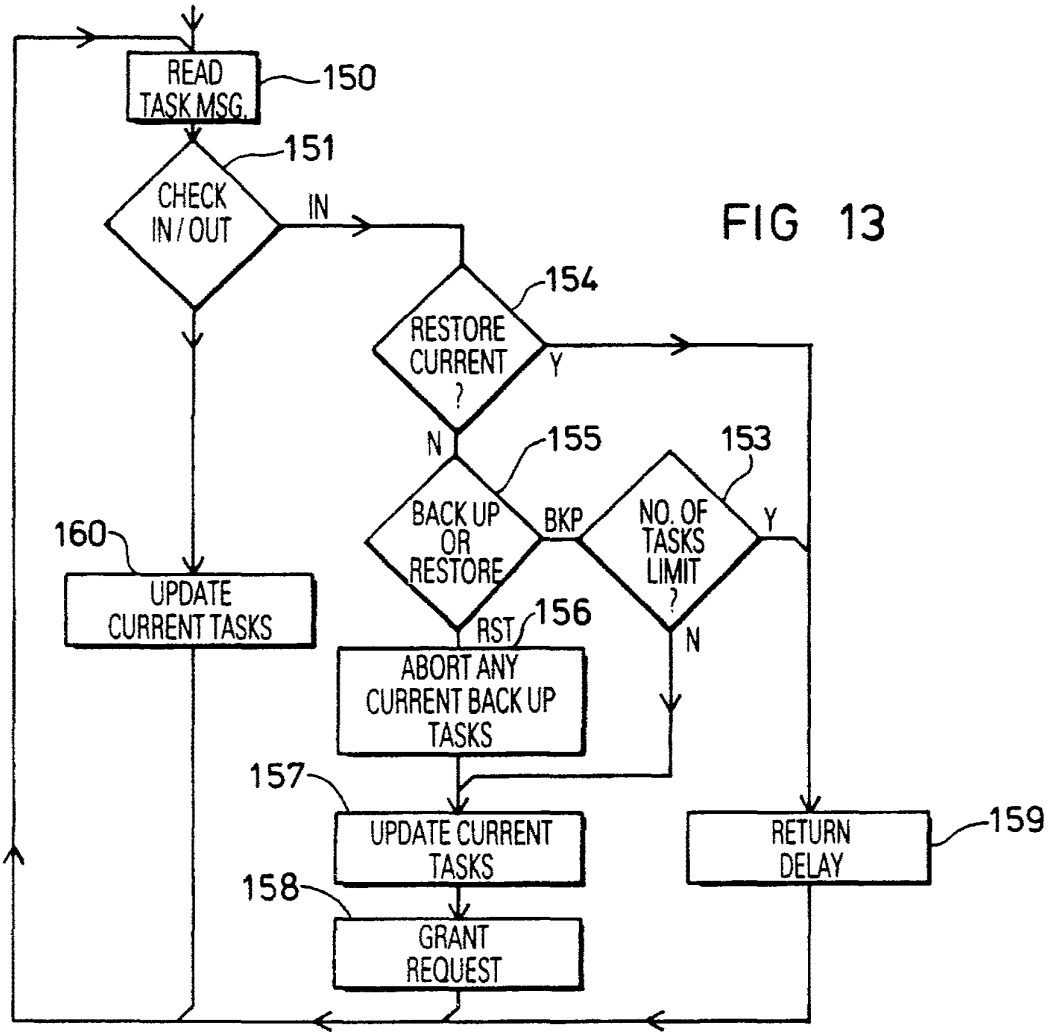

READ TASK MSG.
150
151
CHECK IN / OUT
IN
154
RESTORE CURRENT ?
Y
N
155
153
BACK UP OR RESTORE
BKP
NO. OF TASKS LIMIT ?
Y
160
UPDATE CURRENT TASKS
RST
156
N
ABORT ANY CURRENT BACK UP TASKS
157
UPDATE CURRENT TASKS
RETURN DELAY
159
158
GRANT REQUEST

FIG 13

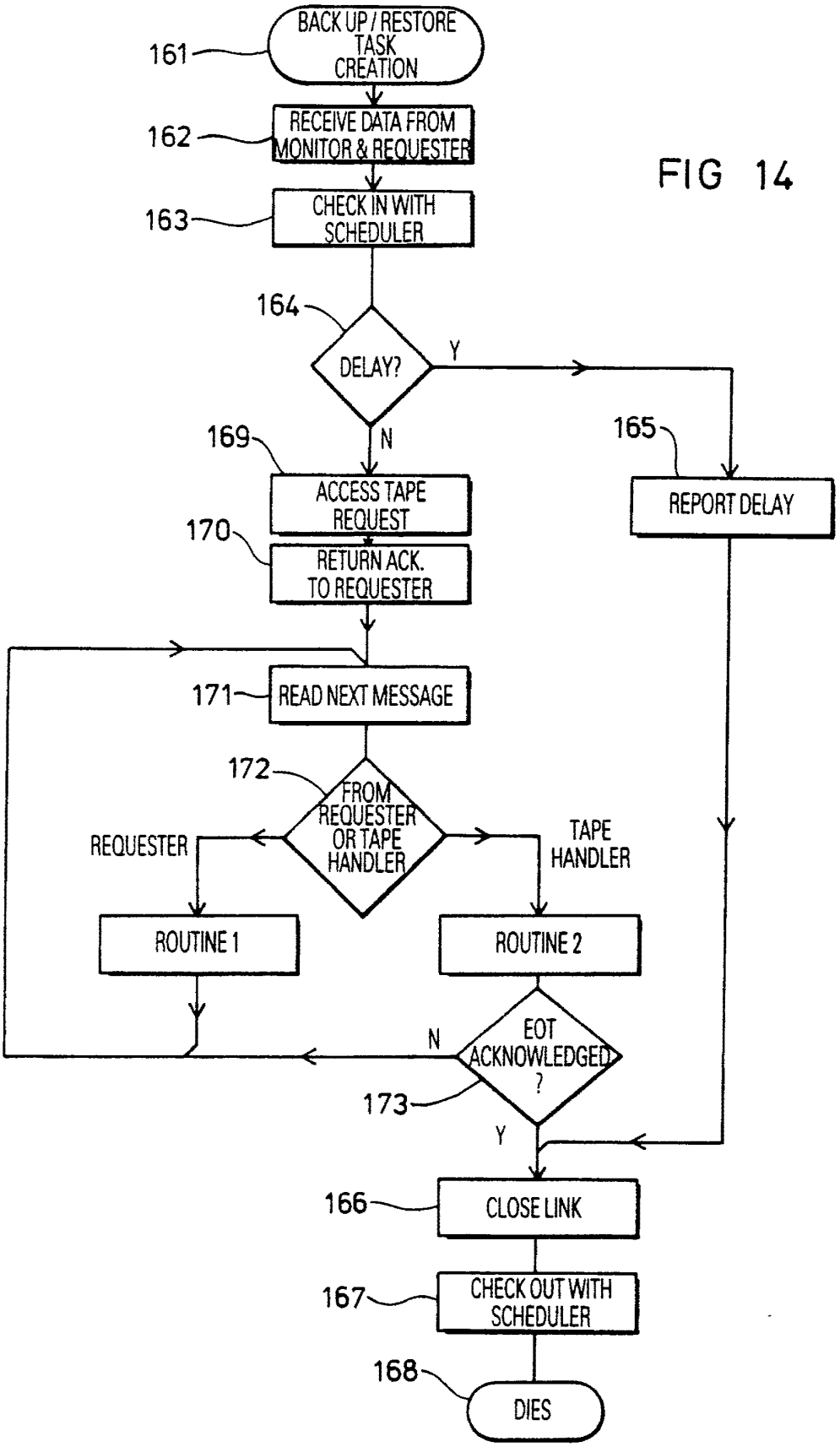
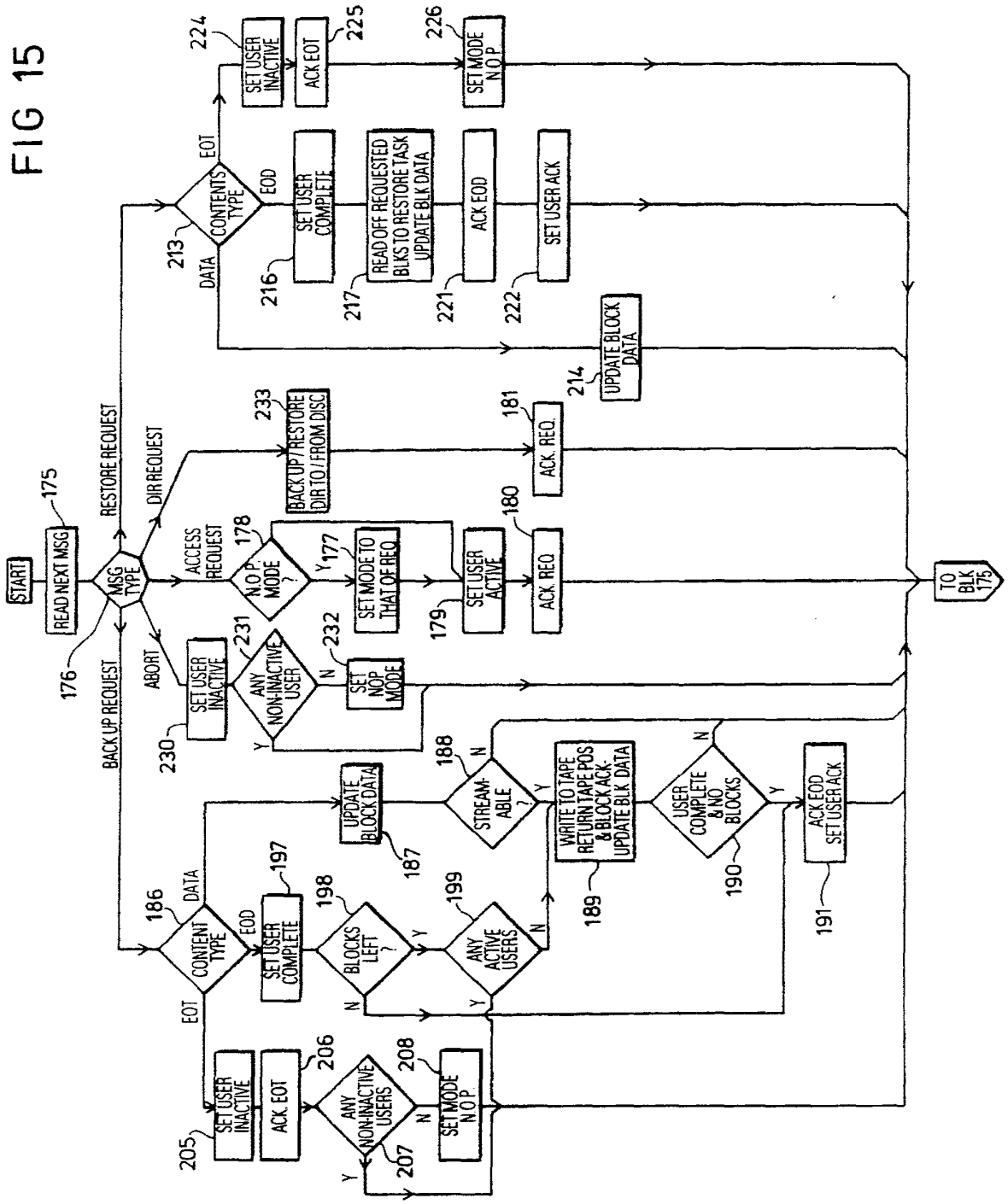

BACK UP / RESTORE TASK CREATION
161
RECEIVE DATA FROM MONITOR & REQUESTER
162
CHECK IN WITH SCHEDULER
163
164
DELAY?
Y
N
165
REPORT DELAY
169
ACCESS TAPE REQUEST
170
RETURN ACK. TO REQUESTER
171
READ NEXT MESSAGE
172
FROM REQUESTER OR TAPE HANDLER
REQUESTER
TAPE HANDLER
ROUTINE 1
ROUTINE 2
EOT ACKNOWLEDGED ?
N
173
Y
166
CLOSE LINK
167
CHECK OUT WITH SCHEDULER
168
DIES

FIG 14

FIG 15


START
READ NEXT MSG
175
MSG TYPE
176
RESTORE REQUEST
DIR REQUEST
BACK UP REQUEST
ACCESS REQUEST
ABORT
CONTENTS TYPE
213
DATA
EOT
EOD
224
SET USER INACTIVE
225
ACK EOT
226
SET MODE N.O.P
216
SET USER COMPLETE
217
READ OFF REQUESTED BLKS TO RESTORE TASK UPDATE BLK DATA
221
ACK EOD
222
SET USER ACK
214
UPDATE BLOCK DATA
233
BACK UP/RESTORE DIR TO/FROM DISC
181
ACK. REQ.
178
N.O.P MODE ?
177
SET MODE TO THAT OF REQ
179
SET USER ACTIVE
180
ACK. REQ.
230
SET USER INACTIVE
231
ANY NON-INACTIVE USER
232
SET NOP MODE
TO BLK 175
186
CONTENT TYPE
DATA
EOT
EOD
197
SET USER COMPLETE
198
BLOCKS LEFT ?
199
ANY ACTIVE USERS
187
UPDATE BLOCK DATA
188
STREAM-ABLE ?
189
WRITE TO TAPE RETURN TAPE POS & BLOCK ACK. UPDATE BLK DATA
190
USER COMPLETE & NO BLOCKS
191
ACK EOD SET USER ACK
205
SET USER INACTIVE
ACK. EOT
206
ANY NON-INACTIVE USERS
207
208
SET MODE N.O.P
Y
N

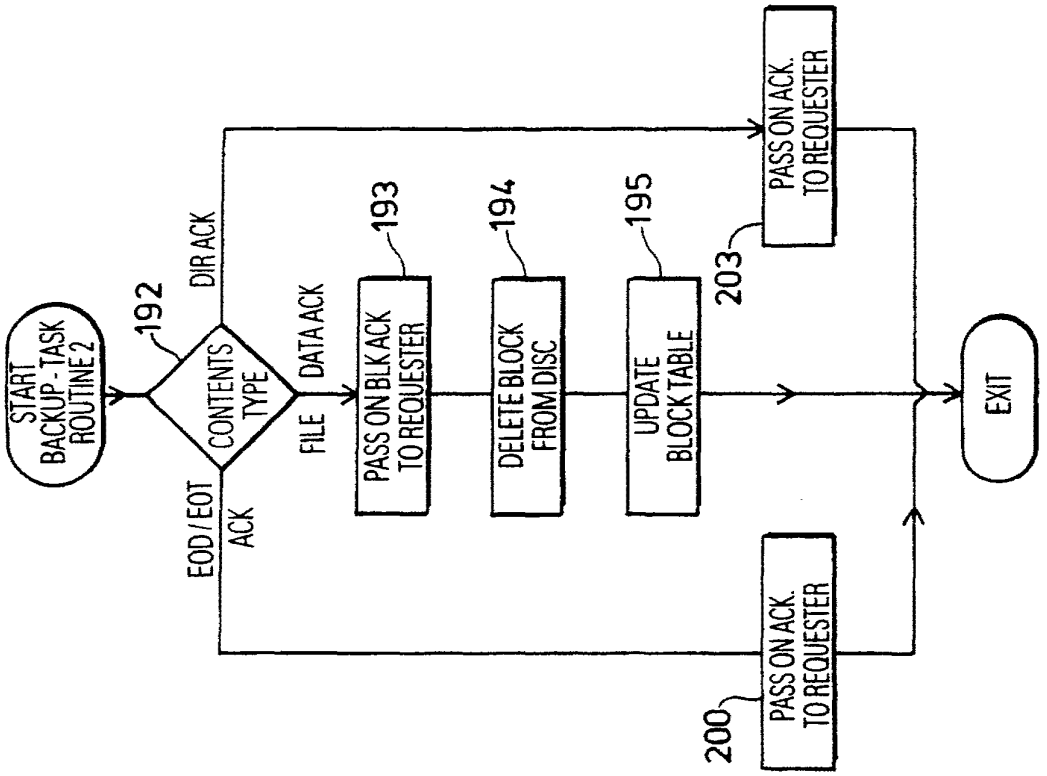


FIG 16B

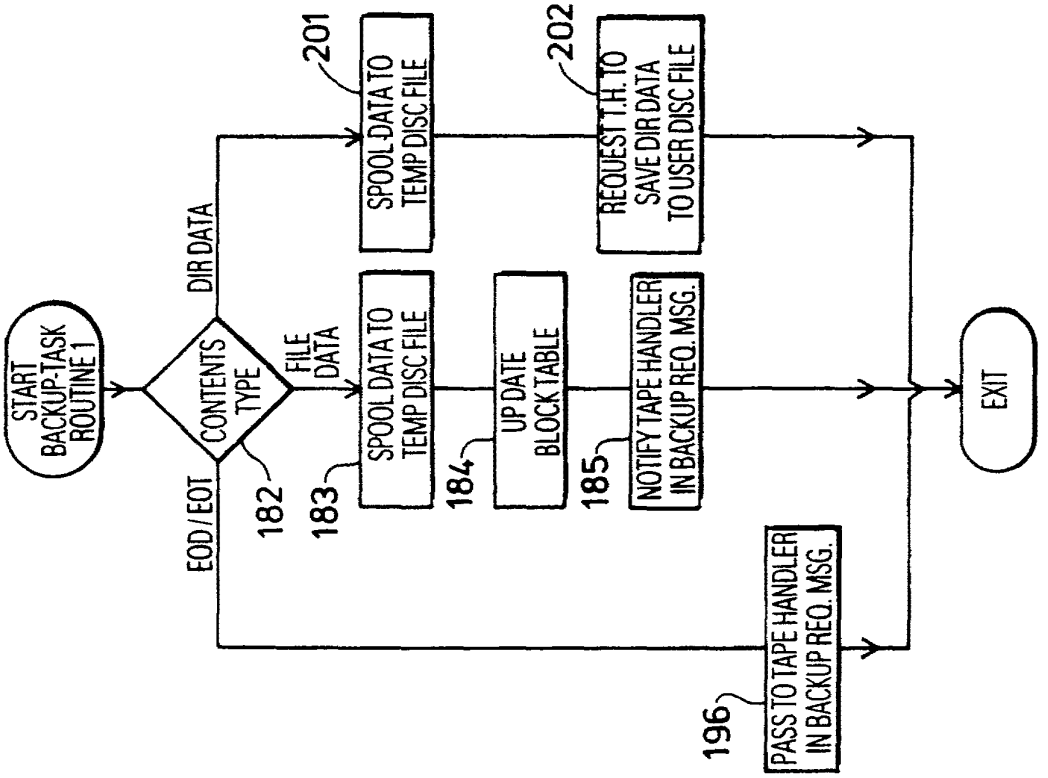


FIG 16A

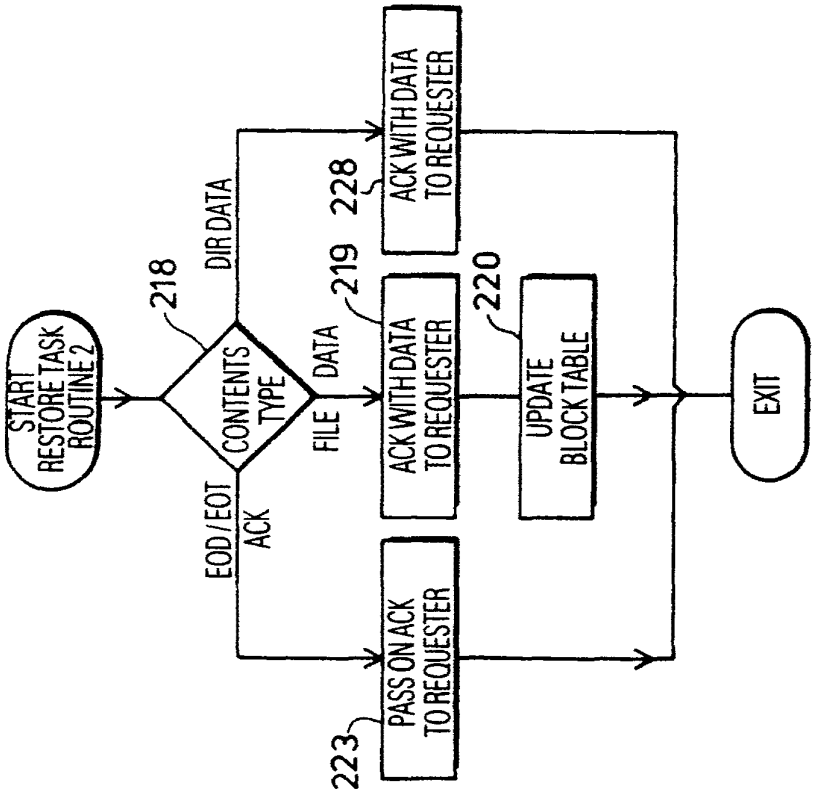


FIG 17B

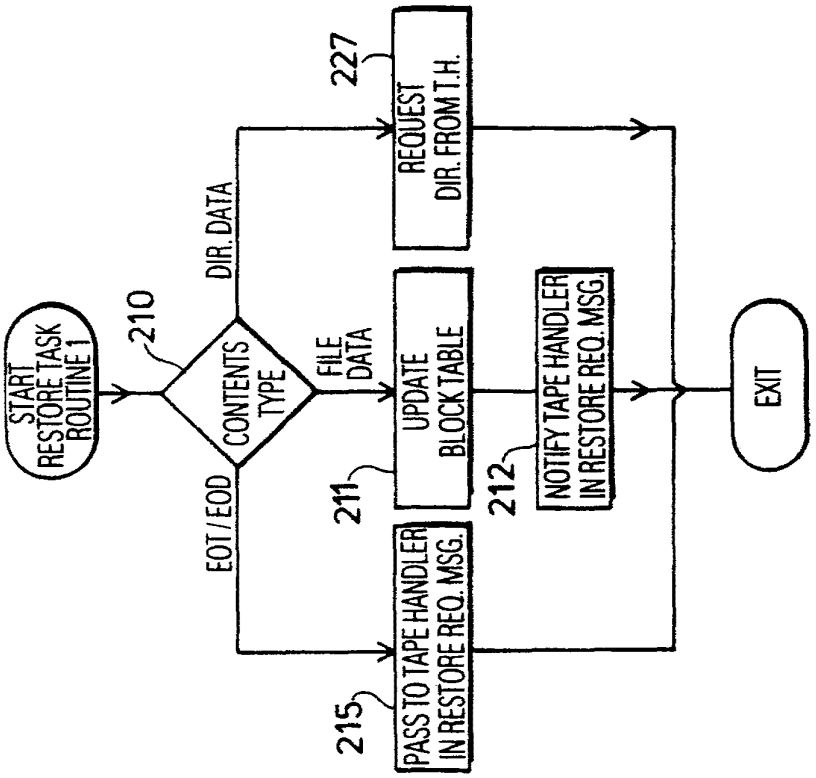


FIG 17A

Electronic Patent Application Fee Transmittal

Application Number:	13925768
Filing Date:	24-Jun-2013
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Filer:	Yiu Fai Au
Attorney Docket Number:	6982-2-CON

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	2806	1	90	90
		Total in USD ($)		**90**

Electronic Acknowledgement Receipt

EFS ID:	22215116
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Yiu Fai Au
Filer Authorized By:	
Attorney Docket Number:	6982-2-CON
Receipt Date:	30-APR-2015
Filing Date:	24-JUN-2013
Time Stamp:	14:31:14
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$90
RAM confirmation Number	912
Deposit Account	506481
Authorized User	AU, YIU F

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

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	2015-04-30_FILED_IDS_Transmittal.pdf	261545 96a2d493384373ba3b8daa8f7b5768370d2065c6	no	2
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	2015-04-30_FILED_IDS.pdf	612679 289b0fa8d1ca8c79c228cbe11c8bf7c8aed7285e	no	5
Warnings:					
Information:					
3	Foreign Reference	EP259912B1.pdf	2314843 d92a4ff8112b7eff84f2b9b42b3a2b0d99568188	no	37
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	30518 772412ff9baecc835f350520089460e360e1097e	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	3219585		

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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.

PTO/SB/21 (07-09)
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TRANSMITTAL FORM

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Total Number of Pages in This Submission	7

Application Number	13925768
Filing Date	2013-06-24
First Named Inventor	Warren Roach
Art Unit	2162
Examiner Name	Baoquoc N To
Attorney Docket Number	6982-2-CON

ENCLOSURES (*Check all that apply*)

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☑ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please Identify below):

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Aspire IP		
Signature	/Yiu F. Au/		
Printed name	Yiu F. Au		
Date	2015-04-30	Reg. No.	67529

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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 on the date shown below:

Signature			
Typed or printed name		Date	

This collection of information is required by 37 CFR 1.5. 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 and1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: ROACH et al. Serial No.: 13/925,768 Filed: June 24, 2013 Atty. File No.: 6982-2-CON Entitled: "AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS"	Group Art Unit: 2162 Confirmation No.: 1803 Examiner: TO, BAOQUOC N Customer No. **104600** ***Submitted via EFS-Web***

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

REPLY AND AMENDMENT UNDER 37 C.F.R. § 1.111

Dear Sir:

In response to the Non-Final Office Action mailed March 12, 2015, Applicant respectfully requests reconsideration of the application in view of the following Amendments and Remarks.

Applicant believes that no extensions of time are required at this time. If extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned for under 37 C.F.R. § 1.136(a). Applicant believes that no further fees for net addition of claims are required at this time. Any fees required for further extensions of time, and any fees for the net addition of claims are hereby authorized to be charged to our Deposit Account No. 50-6481.

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

Remarks begin on page 9 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:

1-62. (Canceled).

63. (Currently Amended) A method for archiving files, comprising steps of (a) to (d) following:

(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating file;

(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;

(c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and

(d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location, wherein the first event is different from the second event.

64. (Canceled)

65. (Previously Presented) The method of claim 63, wherein the resident program is separate from an operating system.

66. (Previously Presented) The method of claim 65, where the resident program comprises a program having control over file operations on one or more operating files.

67. (Previously Presented) The method of claim 63, wherein the operation comprises one of read, write, save, rename, delete, copy, move, open, close, or create operations.

68. (Previously Presented) The method of claim 63, wherein the operating file comprises one of a system file or a user file.

69. (Previously Presented) The method of claim 63, wherein the archive file comprises at least some data of the operating file.

70. (Previously Presented) The method of claim 63, wherein the archive file comprises data of the operating file in one or a combination of a native format and an altered format.

71. (Previously Presented) The method of claim 69, wherein the archive file further comprises a reference to a location of a remainder of the data of the operating file.

72. (Previously Presented) The method of claim 63, wherein the temporary storage location is located in a storage device internal to the computing device.

73. (Previously Presented) The method of claim 72, wherein the temporary storage location comprises a buffer located in the storage device.

74. (Previously Presented) The method of claim 63, wherein the temporary storage location is located in a storage device external to the computing device.

75. (Previously Presented) The method of claim 63, wherein the first event comprises one of the following: a message from a process that created the archive file from the operating file, a message from the resident program, or a message from a timer.

76. (Previously Presented) The method of claim 63, wherein the second event comprises one of the following: a message indicating when the intermediate or the permanent storage

location is available, a message indicating when the intermediate or the permanent storage location is inserted, a message indicating high-bandwidth availability, a message from a server associated with the intermediate or the permanent storage location, or a message from a timer.

77. (Previously Presented) The method of claim 63, wherein the intermediate or the permanent storage location is located in one of a personal attached storage device, a network attached storage device, a Internet storage area network, or a peer-to-peer storage device.

78. (Previously Presented) A non-transitory computer readable medium comprising program instruction for performing the method of claim 63.

79. (Previously Presented) The method of claim 63, wherein the intermediate or the permanent storage location is accessible by the computing device through the Internet.

80. (Canceled)

81. (Previously Presented) The method of claim 63, wherein the second storage location is the permanent storage location.

82. (Canceled)

83. (New) A method for archiving files, comprising steps of (a) to (d) following:

(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating file;

(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;

(c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and

(d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location, wherein the first event includes a message from a timer.

84. (New) A method for archiving files, comprising steps of (a) to (d) following:

(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating file;

(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;

(c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and

(d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location, wherein the second event includes a message from a timer.

85. (New) A method for archiving files, comprising steps of (a) to (d) following:

(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating file;

(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;

(c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and

(d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location, wherein the second event includes a message indicating when the second storage location is available.

86. (New) A method for archiving files, comprising steps of (a) to (i) following:

(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating file;

(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;

(c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event;

(d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location;

(e) after storing the archive file in the temporary storage location, updating a database to indicate that the archive file is located in the temporary storage location;

(f) determining a final destination for the archive file;

(g) moving the archive file from the temporary storage location to an intermediate storage location;

(h) updating the database to indicate the archive file is located in the intermediate storage location; and

(i) after moving the archive file to the second storage location, updating the database to indicate the archive file is located in the second storage location.

87. (New) The method of claim 86, wherein the second storage location includes a personal attached storage device.

88. (New) The method of claim 86, wherein the second storage location includes a network attached storage device.

89. (New) The method of claim 86, wherein the second storage location includes a peer-to-peer storage device.

90. (New) The method of claim 86, wherein the second storage location includes an internet storage area network.

91. (New) An article of manufacture comprising a computer usable medium having computer readable program code for performing the method of claim 86.

92. (New) An article of manufacture comprising a processor configured to perform the method of claim 86.

93. (New) A method for archiving files, comprising the steps of:

(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating file;

(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;

(c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event;

(d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location;

(e) after storing the archive file in the temporary storage location, updating a database to indicate that the archive file is located in the temporary storage location;

(f) the step of moving the archive file from the temporary storage location to an output buffer;

(g) the step of updating the database to indicate that the archive file is located in the output buffer;

(h) the step of transmitting the archive file from the output buffer to the intermediate or the permanent storage location; and

(i) the step of updating the database to indicate that the archive file is located in the intermediate or the permanent storage location.

94. (New) The method of claim 93, wherein the second storage location includes a personal attached storage device.

95. (New) The method of claim 93, wherein the second storage location includes a network attached storage device.

96. (New) The method of claim 93, wherein the second storage location includes an Internet storage area network.

REMARKS/ARGUMENTS

At the outset, the Applicant appreciates the thorough review and consideration of the subject application. The Non-Final Office Action of March 12, 2015, has been received and its contents carefully noted. By this amendment, claim 63 has been amended, claims 64, 80, and 82 have been canceled, and claims 89-96 have been added. Accordingly, claims 63, 65-79, 81, and 83-96 are currently pending in the application. Support for these amendments are provided in at least the Figures and related text of the specification. No new matter has been added.

In view of the above Amendments and the following Remarks, Applicant respectfully requests reconsideration and timely withdrawal of the pending objections and rejections for the reasons discussed below.

Obviousness-type Double Patenting

Claims 63-82 stand rejected on the ground of non-statutory double patenting as allegedly being unpatentable over claims 1-11 of U.S. Patent No. 8,743,478. Applicant respectfully submits that these rejections be held in abeyance until such time that claims of the instant application are found allowable as the status of the claims in the instant patent application have not yet been finalized.

Rejections Under 35 U.S.C. § 103

Claims 63-70, 71-73, 75-79, and 81-82 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 5,638,509 issued to Dunphy, *et al.* ("Dunphy") in view of U.S. Patent No. 6,629,109 issued to Koshisaka ("Koshisaka"). Applicant respectfully traverses this rejection as being moot in view of the claim amendments to claim 63.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103 rejection

Claim 80 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Koshisaka, Dunphy and U.S. Patent No. 5,513,112 issued to Herring, *et al.* ("Herring"). Applicant respectfully traverses this rejection as being moot in view of the claim amendments.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103.

Claim 71 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Koshisaka, Dunphy and U.S. Patent No. 6,779,003 issued to Midgley, *et al.* ("Midgley"). Applicant respectfully traverses this rejection as being moot in view of the claim amendments. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection.

Claim 74 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Koshisaka, Dunphy and U.S. Patent No. 6,983,227 issued to Thalhammer-Reyero, *et al.* ("Thalhammer-Reyero"). Applicant respectfully traverses this rejection as being moot in view of the claim amendments. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection.

New Claims

Claims 83-96 have been added and are directed to features of the invention, which are not disclosed or suggested in the art of record. Accordingly, Applicant respectfully submits that claims 83-96 are in condition for allowance.

CONCLUSION

Applicant believes that a full and complete response has been made to the pending Office Action, and respectfully submits that all of the stated objections and grounds for rejection have been overcome or rendered moot. Accordingly, Applicant respectfully submits that all pending claims are allowable and that the application is in condition for allowance.

Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact the Applicant's undersigned representative at the number below to expedite prosecution.

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,

ASPIRE IP

Dated: April 27, 2015

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Electronic Acknowledgement Receipt

EFS ID:	22175528
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		2015-04-27_FILED_Amendment_Non-Final_of_2015-03-12.pdf	138205 4fe6104c29ee317dee083a1f907cc083bbe07f43	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	8
	Applicant Arguments/Remarks Made in an Amendment	9	11
Warnings:			
Information:			
	Total Files Size (in bytes):	138205	

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.

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	To be Mailed
13/925,768	06/24/2013	☐

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ 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	

APPLICATION AS AMENDED – PART II

AMENDMENT **04/27/2015**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 31	Minus	** 20	= 11	X $40 =	440
Independent (37 CFR 1.16(h))	* 6	Minus	***3	= 3	X $210 =	630
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	**1070**

AMENDMENT

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** 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.

LIE
/DANTE SMITH/

This collection of information is required by 37 CFR 1.16. 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Document code: WFEE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/925,768	06/24/2013	Warren Roach	6982-2-CON	1803

104600 7590 03/12/2015

ASPIRE IP
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EXAMINER
TO, BAOQUOC N

ART UNIT	PAPER NUMBER
2162	

NOTIFICATION DATE	DELIVERY MODE
03/12/2015	ELECTRONIC

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

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

scott@aspireip.com
USPTOMAIL@aspireip.com
alixandria@aspireip.com

Office Action Summary	Application No. 13/925,768	Applicant(s) ROACH ET AL.	
	Examiner BAOQUOC N. TO	Art Unit 2162	AIA (First Inventor to File) Status No

-- 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 *01/22/2014*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ 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

5)☒ Claim(s) *63-82* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *63-82* is/are rejected.

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

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

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

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

11)☒ The drawing(s) filed on *06/24/2013* 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).

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).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

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

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

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

* 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) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/23/2015*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

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

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/22/2014 has been entered.

Claims amended: none

Claims canceled: 1-62

Claims newly added: 63-82

Claims pending: 63-82

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 01/23/2015. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit http://www.uspto.gov/forms/. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled

out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

3. Claims 63-82 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 8,473,478. Although the claims at issue are not identical, they are not patentably distinct from each other because both claims direct to detect an operation of the operating file, creating archive file capture file approximate to the operating file being performed and based on different events the file being move to different location for storage. The instant applicant does not include (c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event and the 478 include the timer for performing the moving and storing process. One ordinary skill in the art at the time of the invention to arrive the same invention.

13/925,758	8,473,478
63. (New) A method for archiving files, comprising steps of(a) to (d) following:	1. In a computing device, a method for archiving files comprising:
(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an	detecting an instruction by the device operating system to perform an operation on an operating file;

operating file;	
(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;	creating an archive file from the operating file and storing the archive file in a temporary first storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;
	after storing the archive file in the first temporary storage location, updating a database to indicate that the archive file is located in the first temporary storage location;
(c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and	searching the first temporary storage location for the archive file responsive to the occurrence of a first event;
	moving the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage

	location;
	updating the database to indicate that the archive file is located in the second intermediate or permanent storage location;
	determining a final destination for the archive file responsive to the occurrence of a third event;
(d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location.	moving the archive file from the first temporary storage location to a third or final storage location; and
	updating the database to indicate that the archive file is located in the third or final storage location.

Dependent claims 63-81 are rejected under the same reason as to claim 63

82. (New) A method for archiving files, comprising steps of(a) to (c) following:	1. In a computing device, a method for archiving files comprising:
(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating file;	detecting an instruction by the device operating system to perform an operation on an operating file;
(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction; and	creating an archive file from the operating file and storing the archive file in a temporary first storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;
	after storing the archive file in the first temporary storage location, updating a database to indicate that the archive file is located in the first temporary storage location;
	searching the first temporary storage

	location for the archive file responsive to the occurrence of a first event;
(c) the step of transmitting the archive file to a permanent storage location responsive to an event.	moving the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location;
	updating the database to indicate that the archive file is located in the second intermediate or permanent storage location;
	determining a final destination for the archive file responsive to the occurrence of a third event;
	moving the archive file from the first temporary storage location to a third or final storage location; and
	updating the database to indicate that the

	archive file is located in the third or final storage location.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under pre-AIA 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of pre-AIA 35 U.S.C. 103(c) and potential pre-AIA 35 U.S.C. 102(e), (f) or (g) prior art under pre-AIA 35 U.S.C. 103(a).

4. Claims 63-70, 71-73, 75-79 and 81-82 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Koshisaka (US. Patent No. 6,629,109 B1) in view of Dunphy et al. (US. Patent No. 5,638,509).

1-62 (Canceled).

As to claim 63. (New) Koshisaka method for archiving files, comprising steps of(a) to (d) following:

(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating (the file manipulation monitoring section 21 of the file revision management system 2 detects file manipulation which is going to be executed by the application1 (step Si). The file manipulation monitoring system 21 constantly monitors API (application program interface) commands which are outputted by the application 1 to the operating system 3…) (col. 6, lines 32-43);

(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction file (when the user of the application ordered “save” (overwrite) of the file "org.doc" which has been edited and thereby the application 1 saves (overwrites) the file “org.doc”, the application 1 first generates the newest temporary filed "$$$.doc" first…) (col. 7, lines 65-67 to col. 8, lines 1-9).

Koshisaka does not explicitly discloses (c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and (d) the step of transmitting the archive file to a second storage location

responsive to a second event, the second storage location being an intermediate or a permanent storage location. However, Dunphy discloses (c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and (d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location (a database located in the data storage and protection apparatus periodically retrieves the event log and uses the information contained therein to identify data files that are then transmitted to a data file backup media for storage. The monitor software also maintains a "stash can" section of memory that is used as virtual data file backup system to temporarily stored data files that the user deletes and modifies, to enable the database to store these files that the user deletes or modifies, to enable the database to store data files on the backup media when the backup media is enabled...) (col. 2, lines 1-25). Furthermore, Dunphy also discloses alternatively, the user can elect to have the data storage and protection system 10 periodically activate so that the data file backup occurs on a regular schedule basic, independent of user...the user is prompt to initiate a backup or the data storage and protection system... (col. 5, lines 45-61). This suggests (c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and (d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify teaching of

Koshisaka to include (c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and (d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location as disclosed by Dunphy in order to allow save and protect file from any unintended action.

As to claim 64. (New) Koshisaka discloses method of claim 63 excepting for wherein the first event is different from the second event; however, Koshisaka discloses wherein the first event is different from the second event (alternatively, the user can elect to have the data storage and protection system 10 periodically activate so that the data file backup occurs on a regular schedule basic, independent of user...the user is prompt to initiate a backup or the data storage and protection system... (col. 5, lines 45-61). This suggests wherein the first event is different from the second event. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify teaching of Koshisaka to include wherein the first event is different from the second event as disclosed by Dunphy in order to allow save and protect file from any unintended action.

As to claim 65. (New) Koshisaka discloses the method of claim 63, wherein the resident program is separate from an operating system (the file manipulation monitoring section 21 and the processing section 22 are implemented by memory-resident

software...the memory-resident-resident software for implement of the file manipulation monitoring section 21 and processing section 22...) (col. 5, lines 58-66).

As to claim 66. (New) Koshisaka discloses the method of claim 65, where the resident program comprises a program having control over file operations on one or more operating files (….hook the API command outputted by application 1 and does not send API command to the operating system 3) (35-43).

As to claim 67. (New) Koshisaka discloses the method of claim 63, wherein the operation comprises one of read, write, save, rename, delete, copy, move, open, close, or create operations (operating word processor software including at least one of plurality operations such as read, write, save, rename, delete, copy, move, open, close, or create operations) (col. 5, lines 51-54).

As to claim 68. (New) Koshisaka discloses the method of claim 63, wherein the operating file comprises one of a system file or a user file (subsequently, the application 1 generally tries to delete unnecessary temporary files ("temp1.doc", "temp2.doc", for example) which have been saved during the current editing session and unnecessary original (old) file ("org.doc", for example) which has been saved at the end of the previous editing session (i.e. at the beginning of the current editing session) (col. 6, lines 19-25).

As to claim 69. (New) Koshisaka discloses the method of claim 63, wherein the archive file comprises at least some data of the operating file ("temp1.doc", "temp2.doc", for example) which have been saved during the current editing session and unnecessary original (old) file ("org.doc", for example) which has been saved at the end of the previous editing session (i.e. at the beginning of the current editing session) (col. 6, lines 19-25).

As to claim 70. (New) Koshisaka discloses the method of claim 63, wherein the archive file comprises data of the operating file in one or a combination of a native format and an altered format (subsequently, the application 1 generally tries to delete unnecessary temporary files ("temp1.doc", "temp2.doc", for example) which have been saved during the current editing session and unnecessary original (old) file ("org.doc", for example) which has been saved at the end of the previous editing session (i.e. at the beginning of the current editing session) (col. 6, lines 19-25).

As to claim 72. (New) Koshisaka discloses the method of claim 63, wherein the temporary storage location is located in a storage device internal to the computing device (the file manipulation is "file deletion" in the deleted file name memory section 23) (col. 6, lines 53-56).

As to claim 73. (New) Koshisaka discloses the method of claim 72, wherein the temporary storage location comprises a buffer located in the storage device (memory section 23) (col. 6, lines 47-54).

As to claim 75. (New) Koshisaka disclose the method of claim 63 excepting for wherein the first event comprises one of the following: a message from a process that created the archive file from the operating file, a message from the resident program, or a message from a timer; however, Dunphy discloses wherein the first event comprises one of the following: a message from a process that created the archive file from the operating file, a message from the resident program, or a message from a timer (alternatively, the user can elect to have the data storage and protection system 10 periodically activate so that the data file backup occurs on a regular schedule basic, independent of user...the user is prompt to initiate a backup or the data storage and protection system... (col. 5, lines 45-61). This suggests wherein the first event comprises one of the following: a message from a process that created the archive file from the operating file, a message from the resident program, or a message from a timer. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify teaching of Koshisaka to include wherein the first event comprises one of the following: a message from a process that created the archive file from the operating file, a message from the resident program, or a message from a timer as disclosed by Dunphy in order to allow save and protect file from any unintended action.

As to claim 76. (New) Koshisaka discloses the method of claim 63 excepting for wherein the second event comprises one of the following: a message indicating when the intermediate or the permanent storage location is available, a message indicating when the intermediate or the permanent storage location is inserted, a message indicating high-bandwidth availability, a message from a server associated with the intermediate or the permanent storage location, or a message from a timer. (alternatively, the user can elect to have the data storage and protection system 10 periodically activate so that the data file backup occurs on a regular schedule basic, independent of user...the user is prompt to initiate a backup or the data storage and protection system... (col. 5, lines 45-61). This suggests wherein the second event comprises one of the following: a message indicating when the intermediate or the permanent storage location is available, a message indicating when the intermediate or the permanent storage location is inserted, a message indicating high-bandwidth availability, a message from a server associated with the intermediate or the permanent storage location, or a message from a timer. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify teaching of Koshisaka to include wherein the second event comprises one of the following: a message indicating when the intermediate or the permanent storage location is available, a message indicating when the intermediate or the permanent storage location is inserted, a message indicating high-bandwidth availability, a message from a server associated with the intermediate or the permanent storage location, or a

message from a timer as disclosed by Dunphy in order to allow save and protect file from any unintended action.

As to claim 77. (New) Koshisaka discloses the method of claim 63 excepting for wherein the intermediate or the permanent storage location is located in one of a personal attached storage device, a network attached storage device, a Internet storage area network, or a peer-to-peer storage device. However, Dunphy discloses wherein the intermediate or the permanent storage location is located in one of a personal attached storage device, a network attached storage device, a Internet storage area network, or a peer-to-peer storage device (the backup device 20 can be collocated with computer system 1 or can be located remote from the computer system and connected thereto via data communication link or network 3) (col. 3, lines 32-35). This suggests wherein the intermediate or the permanent storage location is located in one of a personal attached storage device, a network attached storage device, a Internet storage area network, or a peer-to-peer storage device. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify teaching of Koshisaka to include the backup device 20 can be collocated with computer system 1 or can be located remote from the computer system and connected thereto via data communication link or network 3as disclosed by Dunphy in order to allow save and protect file from any unintended action.

As to claim 78. (New) Koshisaka discloses a non-transitory computer readable medium comprising program instruction for performing the method of claim 63 (the memory-resident software for implementing the functions of the file manipulation monitoring section 21 and the processing section 22 can be supplied to the computer system by means of a record medium such as an FD (Floppy Disk), CD-ROM, ROM etc.) (col. 5, lines 62-66).

As to claim 79. (New) Koshisaka discloses the method of claim 63 excepting for wherein the intermediate or the permanent storage location is accessible by the computing device through the Internet. However, Dunphy discloses wherein the intermediate or the permanent storage location is accessible by the computing device through the Internet (the backup device 20 can be collocated with computer system 1 or can be located remote from computer system 1 and connected thereto via a data communication link 7 or network 3) (col. 3, lines 32-35). This suggests wherein the intermediate or the permanent storage location is accessible by the computing device through the Internet. This suggests wherein the intermediate or the permanent storage location is located in one of a personal attached storage device, a network attached storage device, a Internet storage area network, or a peer-to-peer storage device. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify teaching of Koshisaka to include the backup device 20 can be collocated with computer system 1 or can be located remote from the computer

system and connected thereto via data communication link or network 3 as disclosed by Dunphy in order to allow save and protect file from any unintended action.

As to claim 81. (New) Koshisaka the method of claim 63 excepting for wherein the second storage location is the permanent storage location; however, Dunphy discloses wherein the second storage location is the permanent storage location (the backup device 20 can be collocated with computer system 1 or can be located remote from computer system 1 and connected thereto via a data communication link 7 or network 3) (col. 3, lines 32-35). This suggests wherein the intermediate or the permanent storage location is accessible by the computing device through the Internet. This suggests wherein the intermediate or the permanent storage location is located in one of a personal attached storage device, a network attached storage device, a Internet storage area network, or a peer-to-peer storage device. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify teaching of Koshisaka to include the backup device 20 can be collocated with computer system 1 or can be located remote from the computer system and connected thereto via data communication link or network 3 as disclosed by Dunphy in order to allow save and protect file from any unintended action.

As to claim 82. (New) Koshisaka discloses a method for archiving files, comprising steps of (a) to (c) following:

(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating file (the file manipulation monitoring section 21 of the file revision management system 2 detects file manipulation which is going to be executed by the application1 (step Si). The file manipulation monitoring system 21 constantly monitors API (application program interface) commands which are outputted by the application 1 to the operating system 3…) (col. 6, lines 32-43); and

(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction(when the user of the application ordered “save” (overwrite) of the file "org.doc" which has been edited and thereby the application 1 saves (overwrites) the file “org.doc”, the application 1 first generates the newest temporary filed "$$$.doc" first…) (col. 7, lines 65-67 to col. 8, lines 1-9);

Koshisaka does not explicitly (c) the step of transmitting the archive file to a permanent storage location responsive to an event. However, Dunphy discloses (c) the step of transmitting the archive file to a permanent storage location responsive to an event (a database located in the data storage and protection apparatus periodically retrieves the event log and uses the information contained therein to identify data files that are then transmitted to a data file backup media for storage. The monitor software also maintains a "stash can" section of memory that is used as virtual data file backup system to temporarily stored data files that the user deletes and modifies, to enable the database to store these files that the user deletes or modifies, to enable the database to

store data files on the backup media when the backup media is enabled...) (col. 2, lines 1-25). Furthermore, Dunphy also discloses alternatively, the user can elect to have the data storage and protection system 10 periodically activate so that the data file backup occurs on a regular schedule basic, independent of user...the user is prompt to initiate a backup or the data storage and protection system... (col. 5, lines 45-61). This suggests (c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and (d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify teaching of Koshisaka to include (c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and (d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location as disclosed by Dunphy in order to allow save and protect file from any unintended action.

5. Claim 80 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Koshisaka (US. Patent No. 6,629,109 B1) in view of Dunphy et al. (US. Patent No. 5,638,509) and Herring et al. (US Patent No. 5,513,112)

As to claim 80. (New) Koshisaka and Dunphy disclose the method of claim 63, further comprising a step of, after storing the archive file in the temporary storage location, updating a database to indicate that the archive file is located in the temporary storage location, wherein the step of transmitting comprising steps (i) to (iv) following: (i) the step of moving the archive file from the temporary storage location to an output buffer (iii) the step of transmitting the archive file from the output buffer to the intermediate or the permanent storage location and excepting for (ii) the step of updating the database to indicate that the archive file is located in the output buffer; (iv) the step of updating the database to indicate that the archive file is located in the intermediate or the permanent storage location. However, Herring discloses (ii) the step of updating the database to indicate that the archive file is located in the output buffer; and (iv) the step of updating the database to indicate that the archive file is located in the intermediate or the permanent storage location (for each transaction, the primary computer creates an archived record in a buffer and periodically when the buffer is full send an archive record to the secondary computer for use by the secondary computer to update the secondary database) (abstract, col. 4, lines 40-66). This suggests the concept of moving the archive file and updating the database. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify teach of Koshisaka and Dunphy to include concept of moving the archive file and updating the database as disclosed by Herring in order to record the location of the archive file.

6. Claim 71 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Koshisaka (US. Patent No. 6,629,109 B1) in view of Dunphy et al. (US. Patent No. 5,638,509) and further in view of Midgley et al. (Patent No. US 6,779,003 B1).

As to claim 71. (New) Koshisaka and Dunphy disclose the method of claim 69, wherein the archive file further comprises a reference to a location of a remainder of the data of the operating file. However, Midgley discloses wherein the archive file further comprises a reference to a location of a remainder of the data of the operating file (the catalog process 42 can be a conventional computer process operating on the backup server 12 to collect information from the synchronization and dynamic replication processes to create a database of the different version of the target files being stores. The database can include pointer to the location of the different version of the target files on the tape, thereby providing more rapid access to the location on the tape that includes the information a user may want to restore.) (col. 10, lines 64-67 to col. 11, lines 1-5). This suggests the concept of location files using pointer. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify teaching of Koshisaka and Dunphy to include concept of include pointer to different version of file as disclosed by Midgley in order to allow rapid retrieval.

7. Claim 74 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Koshisaka (US. Patent No. 6,629,109 B1) in view of Dunphy et al. (US. Patent No.

5,638,509) and further in view of Thalhammer-Reyero et al. (US. Patent No. 6,983,227 B1).

As to claim 74. (New) Koshisaka and Dunphy disclose the method of claim 63 excepting for wherein the temporary storage location is located in a storage device external to the computing device. However, Thalhammer-Reyero discloses wherein the temporary storage location is located in a storage device external to the computing device (col. 109, lines 64). This suggests the temporary storage location is located in a storage device external to the computing device. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify teaching of Koshisaka and Dunphy to include wherein the temporary storage location is located in a storage device external to the computing device as disclosed by Thalhammer-Reyero in order to allow protect the data from accidental action.

Conclusion

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vital Pierre can be reached on 571-272-4215. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BAOQUOC N TO/
Primary Examiner, Art Unit 2162

Notice of References Cited	Application/Control No. 13/925,768	Applicant(s)/Patent Under Reexamination ROACH ET AL.	
	Examiner BAOQUOC N. TO	Art Unit 2162	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,629,109	09-2003	Koshisaka, Yoshihiro	1/1
*	B	US-5,638,509	06-1997	Dunphy et al.	714/20
*	C	US-6,779,003	08-2004	Midgley et al.	1/1
*	D	US-5,513,112	04-1996	Herring et al.	705/404
*	E	US-6,983,227	01-2006	Thalhammer-Reyero, Cristina	703/2
	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	
	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.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	Art Unit
	BAOQUOC N TO	2162

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	10/20/2013	07/31/2014	03/06/2015						
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	3	✓	-	-						
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	35	-	-	-						
	36	-	-	-						

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	13925768	ROACH ET AL.
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	BAOQUOC N TO	2162

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☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	10/20/2013	07/31/2014	03/06/2015						
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	68			✓						
	69			✓						
	70			✓						
	71			✓						
	72			✓						

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	**Art Unit**
	BAOQUOC N TO	2162

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	10/20/2013	07/31/2014	03/06/2015						
	73			✓						
	74			✓						
	75			✓						
	76			✓						
	77			✓						
	78			✓						
	79			✓						
	80			✓						
	81			✓						
	82			✓						

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	Art Unit
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CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
707	672	10/21/2013	Bto
707	672	8/10/2014	Bto
707	672	3/7/2015	Bto

SEARCH NOTES		
Search Notes	Date	Examiner
Text search - (USPAT, USPGPUB, EPO, JPO, DERWENT, IBM_TDB)	10/21/2013	Bto
Inventor search - PALM related cases	10/21/2013	Bto
Text search - (USPAT, USPGPUB, EPO, JPO, DERWENT, IBM_TDB)	8/10/2014	Bto
Text search - (USPAT, USPGPUB, EPO, JPO, DERWENT, IBM_TDB)	3/7/2015	Bto

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

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	50	US-4959774-$.DID. OR US-5086502-$.DID. OR US-5212784-$.DID. OR US-5241670-$.DID. OR US-5535381-$.DID. OR US-5604862-$.DID. OR US-5633999-$.DID. OR US-5721916-$.DID. OR US-5771354-$.DID. OR US-6173377-$.DID. OR US-6351776-$.DID. OR US-6366987-$.DID. OR US-6460055-$.DID. OR US-6526418-$.DID. OR US-6549992-$.DID. OR US-6625623-$.DID. OR US-6629109-$.DID. OR US-6804689-$.DID. OR US-7031904-$.DID. OR US-5634052-$.DID. OR US-6298319-$.DID. OR US-5479654-$.DID. OR US-6014676-$.DID. OR US-20020107877-$.DID. OR US-1331018-$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 11:30
L2	2	"6629109".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:02
L3	0	"6629109".pn. and ((buffer$3 or archiv$3) with file$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:19
L4	0	"6629109".pn. and (archiv$3 or buffer$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:31
L5	2	(creat$3 with ((archiv$3 or buffer$3) near2 file$1) with (crash$3 or interrupt$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:32
L6	0	5 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/03/07 12:32

L7	0	5 and 1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/03/07 12:32
L8	229	(((archiv$3 or buffer$3) near2 file$1) with (crash$3 or interrupt$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:33
L9	0	(((archiv$3 or buffer$3) near2 file$1) with (crash$3 or interrupt$4) with (temporary near2 location)) same ((check$3 or verif$5) with (presence or exist$4) with ((archiv$3 or buffer$3) near2 file$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:35
L10	0	(((archiv$3 or buffer$3) near2 file$1) with (crash$3 or interrupt$4) with (temporary near2 location) with (timer$1 or event or schedul$3)) and ((check$3 or verif$5) with (presence or exist$4) with ((archiv$3 or buffer$3) near2 file$1)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:37
L11	0	(((archiv$3 or buffer$3) near2 file$1) with (crash$3 or interrupt$4) with (timer$1 or event or schedul$3)) and ((check$3 or verif$5) with (presence or exist$4) with ((archiv$3 or buffer$3) near2 file$1)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:38
L12	0	(((archiv$3 or buffer$3) near2 file$1) with (crash$3 or interrupt$4 or clos$3) with (timer$1 or event or schedul$3)) and ((check$3 or verif$5) with (presence or exist$4) with ((archiv$3 or buffer$3) near2 file$1)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:38
L13	0	(((archiv$3 or buffer$3) near2 file$1) with (crash$3 or interrupt$4 or clos$3)) and ((timer$1 or event or schedul$3) with (check$3 or verif$5) with (presence or exist$4) with ((archiv$3 or buffer$3) near2 file$1)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:39
L14	0	(((archiv$3 or buffer$3 or mirror$3 or snapshot or backup or mirror$3 or shadow$3) near2 file$1) with (crash$3 or interrupt$4 or clos$3)) and ((timer$1 or event or schedul$3) with (check$3 or verif$5) with (presence or exist$4) with	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2015/03/07 12:39

		((archiv$3 or buffer$3) near2 file$1)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	IBM_TDB			
L15	0	(((archiv$3 or buffer$3 or mirror$3 or snapshot or backup or mirror$3 or shadow$3) near2 file$1) with (crash$3 or interrupt$4 or abrupt$4 or clos$3)) and ((timer$1 or event or schedul$3) with (check$3 or verif$5) with (presence or exist$4) with ((archiv$3 or buffer$3) near2 file$1)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:40
L16	0	(((archiv$3 or buffer$3 or mirror$3 or snapshot or backup or mirror$3 or shadow$3) near2 file$1) with (crash$3 or surge or power or interrupt$4 or abrupt$4 or clos$3)) and ((timer$1 or event or schedul$3) with (check$3 or verif$5) with (presence or exist$4) with ((archiv$3 or buffer$3) near2 file$1)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:40
L17	475	(((archiv$3 or buffer$3 or mirror$3 or snapshot or backup or mirror$3 or shadow$3) near2 file$1) with (crash$3 or surge or power or interrupt$4 or abrupt$4 or clos$3)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:41
L18	50	(((archiv$3 or buffer$3 or mirror$3 or snapshot or backup or captur$3 or mirror$3 or shadow$3) near2 file$1) with (crash$3 or surge or power or interrupt$4 or abrupt$4 or clos$3)) and ((check$3 or identif$5) with (exist$3 or presence) with file$1) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:43
L19	2	(((archiv$3 or buffer$3 or mirror$3 or snapshot or backup or captur$3 or mirror$3 or shadow$3) near2 file$1) with (crash$3 or surge or power or interrupt$4 or abrupt$4 or clos$3)) and ((check$3 or identif$5) with (exist$3 or presence) with file$1 with (event$1 or timer$1 or schedul$3)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:43
L20	0	19 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/03/07 12:44

L21	63	((captur$3 or snapshot) with (crash$3 or interrupt$4 or failure or clos$3)) and ((check$3 or identif$5) with (exist$3 or presence) with file$1 with (event$1 or timer$1 or schedul$3)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:46
L22	0	21 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/03/07 12:46
L23	8	((check$3 or identif$5) with (snapshot or backup) with (exist$3 or presence) with file$1 with (event$1 or timer$1 or schedul$3)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:47
L24	1	23 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/03/07 12:48
L25	1617	((check$3 or identif$5) with (snapshot or backup) with (event$1 or timer$1 or schedul$3)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:49
L26	2349	((check$3 or identif$5) with buffer$3 with (event$1 or timer$1 or schedul$3)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:49
L27	74	((check$3 or identif$5) with buffer$3 with (image$1 or snapshot$1) with (event$1 or timer$1 or schedul$3)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:50
L28	18	27 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/03/07 12:50
L29	1	((check$3 or identif$5) with buffer$3 with (image$1 or snapshot$1) with (event$1 or timer$1 or schedul$3) with (crash$3 or failure or abrupt$4)) and ((mov$3 or	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2015/03/07 12:51

		transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	EPO; JPO; DERWENT; IBM_TDB			
L30	2	((check$3 or identif$5) with buffer$3 with (image$1 or snapshot$1) with (event$1 or timer$1 or schedul$3) with (crash$3 or failure or abrupt$4 or action)) and ((mov$3 or transmit$4 or archiv$3 or backup or mirror$3 or shadow$3) with (timer$1 or event$ 1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:52
L31	119	((check$3 or identif$5) with buffer with file$1 with (event$1 or timer$1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:55
L32	351	((check$3 or identif$5) with (buffer or log$1 or journal$3) with file$1 with (event$1 or timer$1 or schedul$3)) same ((mov$3 or archiv$3 or stor$3 or transmit$4) with (file or image$1 or snapshot) with (disk$1 or volume$1 or memory$1 or tape or permanent or backup or server$1 or database or device$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:58
L33	427	((check$3 or identif$5) with (buffer or log$1 or journal$3) with (snapshot$1 or image$1 or file$1) with (event$1 or timer$1 or schedul$3)) same ((mov$3 or archiv$3 or stor$3 or transmit$4) with (file or image$1 or snapshot) with (disk$1 or volume$1 or memory$1 or tape or permanent or backup or server$1 or database or device$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:59
L34	427	((check$3 or identif$5) with (buffer or log$1 or journal$3) with (snapshot$1 or image$1 or file$1) with (event$1 or timer$1 or schedul$3)) same ((mov$3 or archiv$3 or stor$3 or transmit$4) with (file$1 or image$1 or snapshot) with (disk$1 or volume$1 or memory$1 or tape or permanent or backup or server$1 or database or device$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 12:59
L35	58	34 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/03/07 12:59
L36	72	((check$3 or identif$5) with (buffer or log$1 or journal$3) with (snapshot$1 or image$1 or file$1) with (event$1 or timer$1 or schedul$3)) same ((mov$3 or archiv$3 or stor$3 or transmit$4) with (file$1 or image$1 or snapshot) with (disk$1 or volume$1 or memory$1 or tape or permanent or backup or server$1 or database or device$1)) same ((open$3 or crash$3 or failure or clos$4 or delet$4 or writ$3 or sav$3) near2 file$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 13:00

L37	1	36 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/03/07 13:01
L38	2	"6629109".pn. and monitor$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/03/07 13:08
L39	2	"6629109".pn. and monitor$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/03/07 13:09

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(Not for submission under 37 CFR 1.99)

Application Number	13925768
Filing Date	2013-06-24
First Named Inventor	Warren Roach
Art Unit	2162
Examiner Name	Baoquoc N To
Attorney Docket Number	6982-2-CON

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	4959774		1990-09-25	Davis	
	2	5086502		1992-02-04	Malcolm	
	3	5212784		1993-05-18	Sparks	
	4	5241670		1993-08-31	Eastridge et al.	
	5	5535381		1996-07-09	Kopper	
	6	5604862		1997-02-18	Midgely et al.	
	7	5633999		1997-05-27	Clowes et al.	
	8	5721916		1998-02-24	Pardikar	

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	9	5771354		1998-06-23	Crawford	
	10	6173377		2001-01-09	Yanai et al.	
	11	6351776		2002-02-26	O'Brien et al.	
	12	6366987		2002-04-02	Tzelnic et al.	
	13	6460055		2002-10-01	Midgley et al.	
	14	6526418		2003-02-25	Midgley et al.	
	15	6549992		2003-04-15	Armangau et al.	
	16	6625623		2003-09-23	Midgley et al.	
	17	6629109		2003-09-30	Koshisaka	
	18	6804689		2004-10-12	Havrda et al.	
	19	7031904		2006-04-18	Wilson et al.	

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	20	5634052		1997-05-27	Morris	
	21	6298319		2001-10-02	Heile et al.	
	22	5479654		1995-12-26	Squibb	
	23	6014676		2000-01-11	McClain	

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	1	20020107877		2002-08-08	Whiting et al.	

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	1	PDC BUDTOOL LIVE(TM) AVAILABLE ON SOLARIS; SOLARIS PORT WILL BRING SAFE, LIVE BACKUP CAPABILITY TO LEADING OPERATING SYSTEM, PR Newswire, 06/06/1995, 2p.	☐
	2	DA SILVA et al., Performance of a Parallel Network Backup Manager, USENIX Summer 1992 Technical Conference, San Antonio, Texas, USA, 06/08 - 06/12/1992, pp. 217-225.	☐
	3	DA SILVA et al., The Amanda Network Backup Manager, USENIX Seventh Large Installation Systems Administration Conf. (LISA `93), Monterey, California, USA, 11/01 - 11/05/1993, pp. 170-182.	☐
	4	EpochBackup 7 Administration and User Guide, 03/1997, 138p.	☐
	5	Proceedings of Sixth Goddard Conference on Mass Storage Systems and Technologies in cooperation with the Fifteenth IEEE Symposium on Mass Storage Systems, College Park, Maryland, USA, 3/23 - 3/26/2998, 450p.	☐
	6	Software does live backup, Government Computer News, 13:14, 07/11/1994, p. 48.	☐
	7	Introducing Filo(TM) and Sync, Wayback Machine, 2/2000, 5p.	☐
	8	KOLSTAD, R., A Next Step in Backup and Restore Technology, USENIX Fifth Large Installation Systems Administration Conf. (LISA V), San Diego, California, USA, 09/30 - 10/03/1991, pp. 73-80.	☐
	9	Norton Ghost(TM) Personal Edition User's Guide, 80p.	☐
	10	SHUMWAY, S., Issues In On-line Backup, USENIX Fifth Large Installation Systems Administration Conf. (LISA V), San Diego, California, USA, 09/30 - 10/03/1991, pp. 81-88.	☐
	11	Improved SnapBack Live Provides Enhanced Remote-Site Administration and Faster Backup, Business Wire, 02/10/1998, 2p.	☐

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	12	TEMPLEMAN, P., Network Backup and Archival Strategies, AUUGN, 14:5, 10/1993, pp. 66-76.	☐
	13	CLAPPERTON, G., Understanding Online Backup, PC Network Advisor, 121:15-18, 08/2000.	☐
	14	VAN METER et al., VISA: Netstation's Virtual Internet SCSI Adapter, 07/15/1997, 8p.	☐
	15	ZWICKY, E., Further Torture: More Testing of Backup and Archive Programs, USENIX 17th Large Installation Systems Administration (LISA `03), San Diego, California, USA, 10/26 - 10/31/2003, pp. 7-14.	☐
	16	Tichy, Walter F., "RCS: A System for Version Control" (1984). Computer Science Technical Reports. Paper 394. http://docs.lib.purdue.edu/cstech/394	☐

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Examiner Signature	/Baoquoc To/	Date Considered	03/07/2015

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

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SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yiu F. Au/	Date (YYYY-MM-DD)	2015-01-22
Name/Print	Yiu F. Au	Registration Number	67529

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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	3	5212784		1993-05-18	Sparks	
	4	5241670		1993-08-31	Eastridge et al.	
	5	5535381		1996-07-09	Kopper	
	6	5604862		1997-02-18	Midgely et al.	
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	11	6351776		2002-02-26	O'Brien et al.	
	12	6366987		2002-04-02	Tzelnic et al.	
	13	6460055		2002-10-01	Midgley et al.	
	14	6526418		2003-02-25	Midgley et al.	
	15	6549992		2003-04-15	Armangau et al.	
	16	6625623		2003-09-23	Midgley et al.	
	17	6629109		2003-09-30	Koshisaka	
	18	6804689		2004-10-12	Havrda et al.	
	19	7031904		2006-04-18	Wilson et al.	

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	21	6298319		2001-10-02	Heile et al.	
	22	5479654		1995-12-26	Squibb	
	23	6014676		2000-01-11	McClain	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13925768
	Filing Date	2013-06-24
	First Named Inventor	Warren Roach
	Art Unit	2162
	Examiner Name	Baoquoc N To
	Attorney Docket Number	6982-2-CON

	1	PDC BUDTOOL LIVE(TM) AVAILABLE ON SOLARIS; SOLARIS PORT WILL BRING SAFE, LIVE BACKUP CAPABILITY TO LEADING OPERATING SYSTEM, PR Newswire, 06/06/1995, 2p.	☐
	2	DA SILVA et al., Performance of a Parallel Network Backup Manager, USENIX Summer 1992 Technical Conference, San Antonio, Texas, USA, 06/08 - 06/12/1992, pp. 217-225.	☐
	3	DA SILVA et al., The Amanda Network Backup Manager, USENIX Seventh Large Installation Systems Administration Conf. (LISA `93), Monterey, California, USA, 11/01 - 11/05/1993, pp. 170-182.	☐
	4	EpochBackup 7 Administration and User Guide, 03/1997, 138p.	☐
	5	Proceedings of Sixth Goddard Conference on Mass Storage Systems and Technologies in cooperation with the Fifteenth IEEE Symposium on Mass Storage Systems, College Park, Maryland, USA, 3/23 - 3/26/2998, 450p.	☐
	6	Software does live backup, Government Computer News, 13:14, 07/11/1994, p. 48.	☐
	7	Introducing Filo(TM) and Sync, Wayback Machine, 2/2000, 5p.	☐
	8	KOLSTAD, R., A Next Step in Backup and Restore Technology, USENIX Fifth Large Installation Systems Administration Conf. (LISA V), San Diego, California, USA, 09/30 - 10/03/1991, pp. 73-80.	☐
	9	Norton Ghost(TM) Personal Edition User's Guide, 80p.	☐
	10	SHUMWAY, S., Issues In On-line Backup, USENIX Fifth Large Installation Systems Administration Conf. (LISA V), San Diego, California, USA, 09/30 - 10/03/1991, pp. 81-88.	☐
	11	Improved SnapBack Live Provides Enhanced Remote-Site Administration and Faster Backup, Business Wire, 02/10/1998, 2p.	☐

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	Application Number	13925768
	Filing Date	2013-06-24
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	Attorney Docket Number	6982-2-CON

	12	TEMPLEMAN, P., Network Backup and Archival Strategies, AUUGN, 14:5, 10/1993, pp. 66-76.	☐
	13	CLAPPERTON, G., Understanding Online Backup, PC Network Advisor, 121:15-18, 08/2000.	☐
	14	VAN METER et al., VISA: Netstation's Virtual Internet SCSI Adapter, 07/15/1997, 8p.	☐
	15	ZWICKY, E., Further Torture: More Testing of Backup and Archive Programs, USENIX 17th Large Installation Systems Administration (LISA `03), San Diego, California, USA, 10/26 - 10/31/2003, pp. 7-14.	☐
	16	Tichy, Walter F., "RCS: A System for Version Control" (1984). Computer Science Technical Reports. Paper 394. http://docs.lib.purdue.edu/cstech/394	☐

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Examiner Signature		Date Considered	

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	Attorney Docket Number	6982-2-CON

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Yiu F. Au/	Date (YYYY-MM-DD)	2015-01-22
Name/Print	Yiu F. Au	Registration Number	67529

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	13925768
Filing Date:	24-Jun-2013
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Filer:	Yiu Fai Au
Attorney Docket Number:	6982-2-CON

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	2806	1	90	90
		Total in USD ($)		**90**

Electronic Acknowledgement Receipt

EFS ID:	21281601
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Yiu Fai Au
Filer Authorized By:	
Attorney Docket Number:	6982-2-CON
Receipt Date:	23-JAN-2015
Filing Date:	24-JUN-2013
Time Stamp:	13:51:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$90
RAM confirmation Number	128
Deposit Account	506481
Authorized User	AU, YIU F

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	2015-01-22_FILED_IDS_Transmittal.pdf	261540 4ac8b7122aec62975eb457ff3a30d90b75e5de6a	no	2
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	2015-01-22_FILED_IDS.pdf	614042 66a36524b134364fec8bb26b6b7429b2894935b7	no	7
Warnings:					
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4	Non Patent Literature	da_Silva_et_al.pdf	15376680 563662ffaf466e0d4c5a7dbfd7837fe761097d74	no	9
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Warnings:					
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Warnings:					
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10	Non Patent Literature	Norton_Ghost_Manual.pdf	575845 f268027f625a3b2ac33291867dd7a6ec8d742a51	no	80
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17	Non Patent Literature	RCS-A_System_for_Version_Control.pdf	739488 dca6e9328876f64b693181f712278e3d9d107b4c	no	19
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Warnings:					
Information:					
19	Non Patent Literature	15thIEEE_SympMassStorageSys_PT2.pdf	23485415 7ea420b52e49c10f00fbef9285a2d736ab46abf9	no	113
Warnings:					
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Warnings:					
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21	Non Patent Literature	15thIEEE_SympMassStorageSys_PT4.pdf	24618521 6a9f5ff5172c720a87f11b68c38d041a9a73a91d	no	111
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PTO/SB/21 (07-09)
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission	9

Application Number	13925768
Filing Date	2013-06-24
First Named Inventor	Warren Roach
Art Unit	2162
Examiner Name	Baoquoc N To
Attorney Docket Number	6982-2-CON

ENCLOSURES (*Check all that apply*)

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☑ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
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- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please Identify below):

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Aspire IP		
Signature	/Yiu F. Au/		
Printed name	Yiu F. Au		
Date	2015-01-22	Reg. No.	67529

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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	13925768	Filing Date	2013-06-24	Docket Number (if applicable)	6982-2-CON	Art Unit	2162
First Named Inventor	Warren Roach			Examiner Name	Baoquoc N To		

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. The Instruction Sheet for this form is located at WWW.USPTO.GOV

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).

☐ 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.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ 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)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 506481

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

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Signature of Registered U.S. Patent Practitioner			
Signature	/Yiu F. Au/	Date (YYYY-MM-DD)	2014-12-22
Name	Yiu F. Au	Registration Number	67529

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/22 (03-13)
Approved for use through 3/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)

Docket Number (Optional): 6982-2-CON

Application Number: 13/925,768

Filed: June 24, 2013

For: AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

Art Unit: 2162

Examiner: TO, BAOQUOC N

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	Micro Entity Fee	
☑	One month (37 CFR 1.17(a)(1))	$200	$100	$50	$ 100
☐	Two months (37 CFR 1.17(a)(2))	$600	$300	$150	$
☐	Three months (37 CFR 1.17(a)(3))	$1,400	$700	$350	$
☐	Four months (37 CFR 1.17(a)(4))	$2,200	$1,100	$550	$
☐	Five months (37 CFR 1.17(a)(5))	$3,000	$1,500	$750	$

☑ Applicant asserts small entity status. See 37 CFR 1.27.

☐ Applicant certifies micro entity status. See 37 CFR 1.29.
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

☐ 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 50-6481.

☑ Payment made via EFS-Web.

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. 37 CFR 3.73(b) statement is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration number 67529.

☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.

/Yiu F. Au/ — Signature

December 22, 2014 — Date

Yiu F. Au — Typed or printed name

719-344-9907 — Telephone Number

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☑ * Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). 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 6 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: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	13925768
Filing Date:	24-Jun-2013
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Filer:	Yiu Fai Au
Attorney Docket Number:	6982-2-CON

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	2251	1	100	100
Miscellaneous:				
Request for Continued Examination	2801	1	600	600
		Total in USD ($)		**700**

Electronic Acknowledgement Receipt

EFS ID:	21039630
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Yiu Fai Au
Filer Authorized By:	
Attorney Docket Number:	6982-2-CON
Receipt Date:	22-DEC-2014
Filing Date:	24-JUN-2013
Time Stamp:	17:46:07
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$700
RAM confirmation Number	5389
Deposit Account	506481
Authorized User	AU, YIU F

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

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

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

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

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

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		2014-12-22_FILED_Amendment_Submitted_with_RCE.pdf	125249 ba4184d50d14839d0eee440939679aa65deff1e2	yes	7
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Response After Final Action		1	1	
	Claims		2	5	
	Applicant Arguments/Remarks Made in an Amendment		6	7	
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	2014-12-22_FILED_RCE.pdf	697599 82ca89fc11e59e913dfd745d7a4b6e6021cd9019	no	3
Warnings:					
Information:					
3	Extension of Time	2014-12-22_FILED_Petition_for_1_Month_Extension_of_Time.pdf	187837 6b0a77ca2e1e22c2d5a628c74a70dbc0c5eed19f	no	2
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	32452 93c1046023091733172b1e3716000d9242718d7b	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1043137		

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

New Applications Under 35 U.S.C. 111

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

National Stage of an International Application under 35 U.S.C. 371

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: ROACH et al. Serial No.: 13/925,768 Filed: June 24, 2013 Atty. File No.: 6982-2-CON Entitled: "AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS"	Group Art Unit: 2162 Confirmation No.: 1803 Examiner: TO, BAOQUOC N Customer No. **104600** ***Submitted via EFS-Web***

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

AMENDMENT SUBMITTED WITH RCE

Dear Sir:

In response to the Final Office Action mailed August 21, 2014, Applicant respectfully requests reconsideration of the application in view of the following Amendments and Remarks. Applicants submit this Amendment further in view of the **Request for Continued Examination (RCE)** submitted concurrently herewith.

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

Remarks begin on page 6 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:

1-62 (**Canceled**).

63. (**New**) A method for archiving files, comprising steps of (a) to (d) following:

(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating file;

(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;

(c) the step of identifying presence of the archive file in the temporary storage location responsive to the occurrence of a first event; and

(d) the step of transmitting the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location.

64. (**New**) The method of claim 63, wherein the first event is different from the second event.

65. (**New**) The method of claim 63, wherein the resident program is separate from an operating system.

66. **(New)** The method of claim 65, where the resident program comprises a program having control over file operations on one or more operating files.

67. **(New)** The method of claim 63, wherein the operation comprises one of read, write, save, rename, delete, copy, move, open, close, or create operations.

68. **(New)** The method of claim 63, wherein the operating file comprises one of a system file or a user file.

69. **(New)** The method of claim 63, wherein the archive file comprises at least some data of the operating file.

70. **(New)** The method of claim 63, wherein the archive file comprises data of the operating file in one or a combination of a native format and an altered format.

71. **(New)** The method of claim 69, wherein the archive file further comprises a reference to a location of a remainder of the data of the operating file.

72. **(New)** The method of claim 63, wherein the temporary storage location is located in a storage device internal to the computing device.

73. **(New)** The method of claim 72, wherein the temporary storage location comprises a buffer located in the storage device.

74. **(New)** The method of claim 63, wherein the temporary storage location is located in a storage device external to the computing device.

75. **(New)** The method of claim 63, wherein the first event comprises one of the following: a message from a process that created the archive file from the operating file, a message from the resident program, or a message from a timer.

76. **(New)** The method of claim 63, wherein the second event comprises one of the following: a message indicating when the intermediate or the permanent storage location is available, a message indicating when the intermediate or the permanent storage location is inserted, a message indicating high-bandwidth availability, a message from a server associated with the intermediate or the permanent storage location, or a message from a timer.

77. **(New)** The method of claim 63, wherein the intermediate or the permanent storage location is located in one of a personal attached storage device, a network attached storage device, a Internet storage area network, or a peer-to-peer storage device.

78. **(New)** A non-transitory computer readable medium comprising program instruction for performing the method of claim 63.

79. **(New)** The method of claim 63, wherein the intermediate or the permanent storage location is accessible by the computing device through the Internet.

80. **(New)** The method of claim 63, further comprising a step of, after storing the archive file in the temporary storage location, updating a database to indicate that the archive file is located in the temporary storage location, wherein

the step of transmitting comprising steps (i) to (iv) following:

(i) the step of moving the archive file from the temporary storage location to an output buffer;

(ii) the step of updating the database to indicate that the archive file is located in the output buffer;

(iii) the step of transmitting the archive file from the output buffer to the intermediate or the permanent storage location; and

(iv) the step of updating the database to indicate that the archive file is located in the intermediate or the permanent storage location.

81. (**New**) The method of claim 63, wherein the second storage location is the permanent storage location.

82. (**New**) A method for archiving files, comprising steps of (a) to (c) following:

(a) the step of detecting an instruction by a resident program in a computing device for performing an operation on an operating file;

(b) the step of creating an archive file from the operating file and storing the archive file in a temporary storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction; and

(c) the step of transmitting the archive file to a permanent storage location responsive to an event.

REMARKS/ARGUMENTS

At the outset, the Applicants appreciate the thorough review and consideration of the subject application. The Final Office Action of August 21, 2014, has been received and its contents carefully noted. By this amendment, claims 52-62 have been canceled, and claims 63-82 have been added. Accordingly, claims 63-82 are currently pending in the application. No new matter has been added. In view of the above Amendments and the previously submitted remarks, Applicant respectfully requests reconsideration and timely withdrawal of the pending objections and rejections.

Entry of this Amendment is respectfully requested because it places the present application in condition for allowance, or in the alternative, better form for appeal. In view of the above Amendments and the following Remarks, Applicants respectfully request reconsideration and timely withdrawal of the pending objections and rejections for the reasons discussed below.

Claim 56 has been rejected under 35 U.S.C. § 112(a) for failing to comply with the written description requirement. The rejection is respectfully traversed. Claim 56 has been canceled. According, Applicant respectfully requests withdrawal of the § 112(a) rejection.

Claims 51-55, 57, and 60 have been rejected under 35 U.S.C. § 101 for claiming the same invention as that of claims 1-5 and 8-9 of U.S. Pat. No. 8,473,478. The rejection is respectfully traversed. Claims 51-55, 57, and 60 have been canceled. According, Applicant respectfully requests withdrawal of the § 101 rejection.

New claims 63-82 have been added and are supported by the Specification.

CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in a condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. Applicant does not acquiesce to any objection, rejection, or argument not specifically addressed herein. Rather, the Applicant believes the amendments and arguments contained herein overcome all objections, rejections, or arguments.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (719) 344-9907. The Commissioner is hereby authorized to charge to deposit account number 104600 any fees under 37 CFR § 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby petitioned.

Respectfully submitted,

ASPIRE IP

By: /Yiu F. Au/

Yiu F. Au
Reg. No. 67,529
Aspire IP
444 East Pikes Peak Avenue, Suite 105
Colorado Springs, CO 80903
(719) 344-9907

Date: December 22, 2014

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. 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 13/925,768	Filing Date 06/24/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ 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	

APPLICATION AS AMENDED – PART II

AMENDMENT **12/22/2014**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** 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.

LIE
/F BRISCOE/

This collection of information is required by 37 CFR 1.16. 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/925,768	06/24/2013	Warren Roach	6982-2-CON

CONFIRMATION NO. 1803

104600
ASPIRE IP
24 S. Weber Street
Suite 300
Colorado Springs, CO 80903

POA ACCEPTANCE LETTER

OC000000070860652

Date Mailed: 09/23/2014

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/12/2014.

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.

/ytbedada/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
13/925,768	06/24/2013	2162	800	6982-2-CON	20	2

CONFIRMATION NO. 1803

104600
ASPIRE IP
24 S. Weber Street
Suite 300
Colorado Springs, CO 80903

CORRECTED FILING RECEIPT



Date Mailed: 09/23/2014

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Warren Roach, Colorado Springs, CO;
Steven R. Williams, Colorado Springs, CO;
Troy J. Reiber, Colorado Springs, CO;
Steven C. Burdine, Greenwood Village, CO;

Applicant(s)

INTEGRITY PC INNOVATIONS, INC., Colorado Springs, CO

Power of Attorney: The patent practitioners associated with Customer Number 104600

Domestic Priority data as claimed by applicant

This application is a CON of 09/957,459 09/21/2001 PAT 8473478
which claims benefit of 60/234,221 09/21/2000

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 07/16/2013
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/925,768**
Projected Publication Date: Not Applicable
Non-Publication Request: No
Early Publication Request: No
**** SMALL ENTITY ****

Title

AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

Preliminary Class

707

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PTO/AIA/80 (07-12)
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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

☒ Practitioners associated with Customer Number: 104600

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

☒ The address associated with Customer Number: 104600

OR

☐	Firm or Individual Name			
	Address			
	City		State	Zip
	Country			
	Telephone		Email	

Assignee Name and Address: INTEGRITY PC INNOVATIONS, INC.
110 Broadmoor Hills Drive, Suite 100
Colorado Springs, CO 80906

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	Warren P. Roach	Date	8/13/14
Name	Warren Roach	Telephone	719-574-9734
Title	President		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. 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 3 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: 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.

PTO/AIA/96 (08-12)
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U.S. Patent and Trademark Office;U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of1995, no persons arerequired to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: INTEGRITY PC INNOVATIONS, INC.

Application No./Patent No.: 13/925,768 Filed/Issue Date: June 24, 2013

Titled: AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

INTEGRITY PC INNOVATIONS, INC., a corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

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 033638, Frame 0652, or for which a copy thereof is attached.

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

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.

This collection of information is required by37 CFR3.73(b). The information is required toobtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentialityis governed by35 U.S.C. 122and 37 CFR1.11 and1.14. Thiscollection is estimated to take 12 minutes to complete, including gathering, preparing, and submittingthe 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 tothe Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.**SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

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

PTO/AIA/96 (08-12)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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STATEMENT UNDER 37 CFR 3.73(c)

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.

4. 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.

5. 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.

6. 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(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment 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.

/Yiu F. Au/	September 2, 2014
Signature	Date
Yiu F. Au	67529
Printed or Typed Name	Title or Registration Number

[Page 2 of 2]

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that yoube given certain informationin connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, pleasebe advised that: (1) the general authority forthe collection of thisinformation is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and(3) the principal purpose forwhich the information isused by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent applicationor patent. If you do not furnish the requested information,the U.S. Patent and Trademark Office may not be able to process and/or examineyour submission,which may result in termination of proceedings or abandonment of the applicationor expiration of the patent.

The informationprovided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the informationin order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an InternationalApplication filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, arecord may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from thissystem of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Warren		Roach	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Colorado Springs	State/Province	CO	Country of Residence	US

Mailing Address of Inventor:

Address 1	~~3260 Gilcrest Terrace~~ 110 Broadmoor Hills Drive		
Address 2			
City	Colorado Springs	State/Province	CO
Postal Code	80906	Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Steven	R.	Williams	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Colorado Springs	State/Province	CO	Country of Residence	US

Mailing Address of Inventor:

Address 1	8310 Ashford Court		
Address 2			
City	Colorado Springs	State/Province	CO
Postal Code	80920	Country	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Troy	J.	Reiber	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

City	Colorado Springs	State/Province	CO	Country of Residence	US

Mailing Address of Inventor:

Address 1	15745 Pineycove Court		
Address 2			
City	Colorado Springs	State/Province	CO
Postal Code	80921	Country	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Steven	C.	Burdine	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	~~Middleton~~ Greenwood Village	State/Province	~~WI~~ CO	Country of Residence	US

Mailing Address of Inventor:

Address 1	~~1232 North High Point Road~~ 9563 E Maplewood Circle		
Address 2			
City	~~Middleton~~ Greenwood Village	State/Province	~~WI~~ CO
Postal Code	~~53562~~ 80111	Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	104600		
Email Address	USPTOMAIL@aspireip.com	Add Email	Remove Email

Application Information:

Title of the Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS		
Attorney Docket Number	6982-2-CON	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	Suggested Figure for Publication (if any)	1

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	**Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	104600		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	09/957459	2001-09-21
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
09/957459	non provisional of	60/234221	2000-09-21

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Remove

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Authorization to Permit Access:

☐ Authorization to Permit Access to the Instant Application by the Participating Offices

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date o f filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

◉ Assignee	○ Legal Representative under 35 U.S.C. 117	○ Joint Inventor
○ Person to whom the inventor is obligated to assign.	○ Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor :

If the Applicant is an Organization check here. ☒

Organization Name	INTEGRITY PC INNOVATIONS, INC.

Mailing Address Information For Applicant:

Address 1	~~1220 Lake Plaza Drive~~ 110 Broadmoor Hills Drive, Suite 100		
Address 2			
City	Colorado Springs	**State/Province**	CO
Country	US	Postal Code	80906
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button.

Non-Applicant Assignee Information:

Providing assignment information in this section does not subsitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1

Complete this section only if non-applicant assignee information is desired to be included on the patent application publication in accordance with 37 CFR 1.215(b). Do not include in this section an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest), as the patent application publication will include the name of the applicant(s).

If the Assignee is an Organization check here. ☐

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Non-Applicant Assignee:

Address 1	
Address 2	

City		**State/Province**	
Country		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee Data may be generated within this form by selecting the Add button.

Signature:

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

Signature	/Scott J. Hawranek/			Date (YYYY-MM-DD)	2013-06-24
First Name	Scott J.	Last Name	Hawranek	Registration Number	52411

Additional Signature may be generated within this form by selecting the Add button.

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent C o o p eration Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	20109391
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Yiu Fai Au
Filer Authorized By:	
Attorney Docket Number:	6982-2-CON
Receipt Date:	12-SEP-2014
Filing Date:	24-JUN-2013
Time Stamp:	11:43:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	2014-09-11_FILED_POA.pdf	279813 f37d204469285d3b62a5e88e66b0bf07a735cdbd	no	1

Warnings:	
Information:	

2	Assignee showing of ownership per 37 CFR 3.73.	2014-09-11_FILED_373c_statement.pdf	118523 eea7f947763f2e632e90cbe9cfdbc72d320c8e63	no	3
Warnings:					
Information:					
3	Application Data Sheet	2014-09-11_FILED_Corrected_ADS.pdf	103712 7b1a49340ba9521c4f3622e282cad9d90df13f72	no	7
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
			Total Files Size (in bytes):	502048	

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 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.
13/925,768	06/24/2013	Warren Roach	6982-2-CON	1803

104600 7590 08/21/2014

ASPIRE IP
24 S. Weber Street
Suite 300
Colorado Springs, CO 80903

EXAMINER
TO, BAOQUOC N

ART UNIT	PAPER NUMBER
2162	

NOTIFICATION DATE	DELIVERY MODE
08/21/2014	ELECTRONIC

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

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

scott@aspireip.com
USPTOMAIL@aspireip.com
alixandria@aspireip.com

Office Action Summary	Application No. 13/925,768	Applicant(s) ROACH ET AL.	
	Examiner BAOQUOC N. TO	Art Unit 2162	AIA (First Inventor to File) Status No

-- 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 *06/24/2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ 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

5)☒ Claim(s) *52-62* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *52-62* is/are rejected.

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

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

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

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

11)☒ The drawing(s) filed on *06/24/2013* 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).

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).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

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

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

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

* 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) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

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

1. In the preliminary amendment filed on 06/24/2013, applicant(s) amend the application as follow:

Claims amended: none

Claims canceled: 1-51

Claims newly added: 52-62

Claims pending: 52-62

35 USC § 101

2. The amendment including the cancelation of claims 1-20; therefore, the 101 rejection is removed.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

> (a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 56 is rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention. The internet cloud storage is not internet-based network, was not included in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
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.

5. Claim 56 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention. Since applicant did not provided any support for the Internet cloud storage areas network, examiner only an interpret the Internet cloud storage areas network be internet storage such as storage server accessible through internet network.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process... may obtain a patent therefor..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the claims that are directed to the same invention so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

6. Claims 51-55, 57 and 60 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-5 and 8-9 of prior U.S. Patent No. 8,473,478 B2. This is a statutory double patenting rejection.

13/925,758	8,473,478
52. (New) In a computing or file storage device, a method for archiving files comprising:	1. In a computing device, a method for archiving files comprising:

detecting an instruction by the device operating system to perform an operation on an operating file;	detecting an instruction by the device operating system to perform an operation on an operating file;
creating an archive file from the operating file and storing the archive file in a temporary first storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;	creating an archive file from the operating file and storing the archive file in a temporary first storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;
after storing the archive file in the first temporary storage location, updating a database to indicate that the archive file is located in the first temporary storage location;	after storing the archive file in the first temporary storage location, updating a database to indicate that the archive file is located in the first temporary storage location;
searching the first temporary storage location for the archive file responsive to the occurrence of a first event;	searching the first temporary storage location for the archive file responsive to the occurrence of a first event;
moving the archive file to a second storage	moving the archive file to a second storage

location responsive to a second event, the second storage location being an intermediate or a permanent storage location;	location responsive to a second event, the second storage location being an intermediate or a permanent storage location;
updating the database to indicate that the archive file is located in the second intermediate or permanent storage location;	updating the database to indicate that the archive file is located in the second intermediate or permanent storage location;
determining a final destination for the archive file responsive to the occurrence of a third event;	determining a final destination for the archive file responsive to the occurrence of a third event;
moving the archive file from the first temporary storage location to a third or final storage location; and	moving the archive file from the first temporary storage location to a third or final storage location; and
updating the database to indicate that the archive file is located in the third or final storage location.	updating the database to indicate that the archive file is located in the third or final storage location.

53. (New) the method of claim 52 wherein	2. The method of claim 1 wherein the

the second storage location includes a personal attached storage device.	second storage location includes a personal attached storage device.

54. (New) the method of claim 52 wherein the second storage location includes a network attached storage device.	3. The method of claim 1 wherein the second storage location includes a network attached storage device.

55. (New) the method of claim 52 wherein the second storage location includes a peer-to-peer storage device.	4. The method of claim 1 wherein the second storage location includes a peer-to-peer storage device.

57. (New) In a computing or file storage device, a method for archiving files comprising:	8. In a computing device, a method for archiving files comprising:
detecting an instruction by the device operating system to perform an operation on an operating file;	Detecting an instruction by an operating system to perform an operation on an operating file;
creating an archive file from the operating file and storing the archive file in a temporary first storage location temporally proximate to the operation being	Creating an archive file from the operating file and storing the archive file in a temporary first location storage location temporally proximate to the operation

performed on the operating file and responsive to detecting the instruction;	being performed on the operating file and responsive to detecting the instruction;
searching the first temporary storage location for the archive file responsive to the occurrence of a first event; and	Searching the first temporary storage location for the archive file responsive to the occurrence of a first event;
moving the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location, wherein the first event includes a message from a timer.	Moving the archive file to second storage location responsive to a second event, the second storage location being a permanent storage location. Wherein the first event includes message from a timer.

60. (New) In a computing or file storage device, a method for archiving files comprising:	8. In a computing device, a method for archiving files comprising:
detecting an instruction by the device operating system to perform an operation on an operating file;	Detecting an instruction by an operating system to perform an operation on an operating file;
creating an archive file from the operating file and storing the archive file in a temporary first storage location temporally	Creating an archive file from the operating file and storing the archive file in a temporary first location storage location

proximate to the operation being performed on the operating file and responsive to detecting the instruction;	temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;
searching the first temporary storage location for the archive file responsive to the occurrence of a first event; and	Searching the first temporary storage location for the archive file responsive to the occurrence of a first event;
moving the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location, wherein the first second includes a message from a timer.	Moving the archive file to second storage location responsive to a second event, the second storage location being a permanent storage location. Wherein the first second includes message from a timer.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). 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 date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BAOQUOC N. TO whose telephone number is (571)272-4041. The examiner can normally be reached on 9:00 - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vital Pierre can be reached on 571-272-4215. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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

/BAOQUOC N TO/

Primary Examiner, Art Unit 2162

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	((archiv$3 or cach$3) with (crash$3 or interrupt$4)) same (mov$3 with permanent$1 with location$1 with (schedul$3 or timer$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/08/10 15:40
L2	0	((archiv$3 or cach$3) with (crash$3 or interrupt$4)) same (mov$3 with permanent$1 with location$1 with (schedul$3 or timer$1)) same (updat$3 with (database$1 or storage$1) with ((archived or cached) near2 file$1)) same ((mov$3 or stor$3) with (third or final) with location$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/08/10 15:42
L3	0	((archiv$3 or cach$3) with (crash$3 or interrupt$4)) same ((mov$3 or stor$3) with permanent$1 with location$1 with (schedul$3 or timer$1)) same (updat$3 with (database$1 or storage$1) with ((archived or cached) near2 file$1)) same ((mov$3 or stor$3) with (third or final) with location$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/08/10 15:43
L4	0	((archiv$3 or cach$3) with (crash$3 or interrupt$4)) same ((mov$3 or stor$3) with permanent$1 with location$1 with (schedul$3 or timer$1)) same (updat$3 with (database$1 or storage$1) with ((archived or cached) near2 file$1)) same ((mov$3 or stor$3) with (third or final) with location$1 with (timer$1 or schedul$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/08/10 15:43

EAST Search History (Interference)

<This search history is empty>

8/10/2014 3:43:49 PM
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	Art Unit
	BAOQUOC N TO	2162

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	10/20/2013	07/31/2014							
	1	✓	-							
	2	✓	-							
	3	✓	-							
	4	✓	-							
	5	✓	-							
	6	✓	-							
	7	✓	-							
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	33	-	-							
	34	-	-							
	35	-	-							
	36	-	-							

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	**Art Unit**
	BAOQUOC N TO	2162

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	10/20/2013	07/31/2014							
	37	-	-							
	38	-	-							
	39	-	-							
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	41	-	-							
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	52		✓							
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	58		✓							
	59		✓							
	60		✓							
	61		✓							
	62		✓							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	Art Unit
	BAOQUOC N TO	2162

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
707	672	10/21/2013	Bto
707	672	8/10/2014	Bto

SEARCH NOTES		
Search Notes	Date	Examiner
Text search - (USPAT, USPGPUB, EPO, JPO, DERWENT, IBM_TDB)	10/21/2013	Bto
Inventor search - PALM related cases	10/21/2013	Bto
Text search - (USPAT, USPGPUB, EPO, JPO, DERWENT, IBM_TDB)	8/10/2014	Bto

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: ROACH et al. Serial No.: 13/925,768 Filed: June 24, 2013 Atty. File No.: 6982-2-CON Entitled: "AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS"	Group Art Unit: 2162 Confirmation No.: 1803 Examiner: TO, BAOQUOC N Customer No. **104600** ***Submitted via EFS-Web***

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

AMENDMENT

Dear Madam:

Applicant submits this Amendment and Response to address the Non-Final Office Action having a mailing date of October 31, 2013. A Petition for a three (3)-month extension of time under 37 C.F.R. §1.136(a) is filed herewith extending the period for response through April 30, 2013. Please credit any overpayment or charge any underpayment to credit card on file.

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

Remarks begin on page **5** of this paper.

AMENDMENTS TO THE CLAIMS

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

Listing of Claims:

1-51. (Canceled)

52. (New) In a computing or file storage device, a method for archiving files comprising:

detecting an instruction by the device operating system to perform an operation on an operating file;

creating an archive file from the operating file and storing the archive file in a temporary first storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;

after storing the archive file in the first temporary storage location, updating a database to indicate that the archive file is located in the first temporary storage location;

searching the first temporary storage location for the archive file responsive to the occurrence of a first event;

moving the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location;

updating the database to indicate that the archive file is located in the second intermediate or permanent storage location;

determining a final destination for the archive file responsive to the occurrence of a third event; moving the archive file from the first temporary storage location to a third or final storage location; and

updating the database to indicate that the archive file is located in the third or final storage location.

53. (New) The method of claim 52 wherein the second storage location includes a personal attached storage device.

54. (New) The method of claim 52 wherein the second storage location includes a network attached storage device.

55. (New) The method of claim 52 wherein the second or third storage location includes a peer-to-peer storage device.

56. (New) The method of claim 52 wherein the second or third storage location includes an Internet cloud storage area network.

57. (New) In a computing or file storage device, a method for archiving files comprising:

detecting an instruction by the device operating system to perform an operation on an operating file;

creating an archive file from the operating file and storing the archive file in a temporary first storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;

searching the first temporary storage location for the archive file responsive to the occurrence of a first event; and

moving the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location, wherein the first event includes a message from a timer.

58. (New) The method of claim 57 wherein the message from a timer includes an internal device operating system generated message.

59. (New) The method of claim 57 wherein the message from a timer includes an external intermediate or permanent storage system generated message.

60. (New) In a computing or file storage device, a method for archiving files comprising:

detecting an instruction by the device operating system to perform an operation on an operating file;

creating an archive file from the operating file and storing the archive file in a temporary first storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;

searching the first temporary storage location for the archive file responsive to the occurrence of a first event; and

moving the archive file to a second storage location responsive to a second event, the second storage location being an intermediate or a permanent storage location, wherein the second event includes a message from a timer.

61. (New) The method of claim 60 wherein the message from a timer includes an internal device operating system generated message.

62. (New) The method of claim 60 wherein the message from a timer includes an external intermediate or permanent storage system generated message.

REMARKS/ARGUMENTS

The Non-Final Office Action of October 31, 2013, has been received and its contents carefully noted. By this amendment, claims 1-51 have been canceled, and claims 52-62 have been added. Accordingly, claims 52-62 are currently pending in the application. No new matter has been added. In view of the above Amendments and the following Remarks, Applicant respectfully requests reconsideration and timely withdrawal of the pending objections and rejections for the reasons discussed below.

Rejections Under 35 U.S.C. § 101

Claims 16-18 have been rejected under 35 U.S.C. § 101 for being directed to non-statutory subject matter. The rejection is respectfully traversed. Claims 16-18 have been canceled. According, withdrawal of the § 101 rejection is respectfully requested.

Rejections Under 35 U.S.C. § 112

Claims 16-18 have been rejected under 35 U.S.C. § 112(d) or pre-AIA 35 U.S.C. § 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends. The rejection is respectfully traversed. Claims 16-18 have been canceled. According, withdrawal of the § 112 rejection is respectfully requested.

Double Patenting

Claims 1-20 have been rejected for nonstatutory double patenting as being unpatentable over Claims 1-11 of U.S. Pat. No. 8,473,478. The rejection is respectfully traversed. Claims 1-20 have been canceled. According, withdrawal of the double patent rejection is respectfully requested.

Rejections Under 35 U.S.C. §§ 102 and 103

Claims 1-18 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,629,109 to Koshisaka in view of U.S. Pat. No. 5,638,509 to Dunphy et al. Claims 19-20 have been rejected under pre-AIA 35 U.S.C. § 102(b) as being unpatentable over U.S. Pat. No. 5,638,509 to Dunphy. The rejections are respectfully traversed. Claims 1-20 have been canceled. Accordingly, withdrawal of the §§ 102 and 103 rejections is respectfully requested.

New Claims

New Claims 52-62 have been added and are supported by the Specification.

CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in a condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. Applicant does not acquiesce to any objection, rejection, or argument not specifically addressed herein. Rather, the Applicant believes the amendments and arguments contained herein overcome all objections, rejections, or arguments.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (719) 344-9907.

The Commissioner is hereby authorized to charge to credit card on file any fees under 37 CFR § 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby petitioned.

Respectfully submitted,

ASPIRE IP

By: /Yiu F. Au/
Yiu F. Au
Registration No. 67,529
Aspire IP
24 South Weber Street, Suite 300
Colorado Springs, CO 80903
(719) 344-9907

Date: April 30, 2014

Electronic Patent Application Fee Transmittal

Application Number:	13925768
Filing Date:	24-Jun-2013
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Filer:	Yiu Fai Au/Alixandria Bruson
Attorney Docket Number:	6982-2-CON

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 3 months with $0 paid	2253	1	700	700

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**700**

Electronic Acknowledgement Receipt

EFS ID:	18901521
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Yiu Fai Au/Alixandria Bruson
Filer Authorized By:	Yiu Fai Au
Attorney Docket Number:	6982-2-CON
Receipt Date:	30-APR-2014
Filing Date:	24-JUN-2013
Time Stamp:	12:43:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$700
RAM confirmation Number	10482
Deposit Account	
Authorized User	

File Listing:

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

1	Extension of Time	2014-04-30_3_Month_Extension_of_Time.pdf	162694 0e436a454cba57e44129b2ef5bab2f8d5fcf3742	no	2
Warnings:					
Information:					
2		2014-04-30_Response_to_NFOA_Mailed_10_31_2013.pdf	127994 4bdcf1da733427ae883b5b2c2248f0113a77ee66	yes	6

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	6

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30577 6a1932a0d8b6eb9ab3a68b432cc12f3730c61e01	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	321265		

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

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

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

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

PTO/AIA/22 (03-13)
Approved for use through 7/31/2016. 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 CFR 1.136(a)

Docket Number (Optional): 6982-2-CON

Application Number: 13/925,768

Filed: June 24, 2013

For: AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

Art Unit: 2162

Examiner: TO, BAOQUOC N

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	Micro Entity Fee	
☐ One month (37 CFR 1.17(a)(1))	$200	$100	$50	$
☐ Two months (37 CFR 1.17(a)(2))	$600	$300	$150	$
☑ Three months (37 CFR 1.17(a)(3))	$1,400	$700	$350	$ 700
☐ Four months (37 CFR 1.17(a)(4))	$2,200	$1,100	$550	$
☐ Five months (37 CFR 1.17(a)(5))	$3,000	$1,500	$750	$

☑ Applicant asserts small entity status. See 37 CFR 1.27.

☐ Applicant certifies micro entity status. See 37 CFR 1.29.
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

☐ 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 _____.

☑ Payment made via EFS-Web.

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.

☑ attorney or agent of record. Registration number 67529.

☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.

/Yiu F. Au/ — Signature

April 30, 2014 — Date

Yiu F. Au — Typed or printed name

_____ — Telephone Number

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☑ * Total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). 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 6 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 PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. 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.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/925,768	Filing Date 06/24/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ 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	

APPLICATION AS AMENDED – PART II

AMENDMENT 04/30/2014

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 11	Minus	** 20	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** 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.

LIE
/SHARAIN MORELAND/

This collection of information is required by 37 CFR 1.16. 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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.
13/925,768	06/24/2013	Warren Roach	6982-2-CON	1803

104600 7590 10/31/2013

ASPIRE IP
24 S. Weber Street
Suite 300
Colorado Springs, CO 80903

EXAMINER
TO, BAOQUOC N

ART UNIT	PAPER NUMBER
2162	

NOTIFICATION DATE	DELIVERY MODE
10/31/2013	ELECTRONIC

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

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

scott@aspireip.com
USPTOMAIL@aspireip.com
alixandria@aspireip.com

Office Action Summary	Application No. 13/925,768	Applicant(s) ROACH ET AL.	
	Examiner BAOQUOC N. TO	Art Unit 2162	AIA (First Inventor to File) Status No

-- 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 *06/24/2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ 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

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-20* is/are rejected.

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

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

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

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

11)☒ The drawing(s) filed on *06/24/2013* 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).

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).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

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

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

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

* 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) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

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

1. In the preliminary amendment filed on 06/24/2013, applicant(s) amend the application as follow:

Claims amended: none

Claims canceled: 21-51

Claims pending: 1-20

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 16-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because claim 16 recited article of manufacture include computer usable medium having instruction. Since there is no disclosure in applicant's specification to define the computer usable medium is. One can assume the computer readable medium also encompasses the non-statutory subject matter. Claim 17 recited a data transmission signal which is clearly not a statutory subject matter. Claim 18 recited article of manufacture which also encompasses the non-statutory subject matter.

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(d):

> (d) REFERENCE IN DEPENDENT FORMS.—Subject to subsection (e), a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), fourth paragraph:

> Subject to the [fifth paragraph of 35 U.S.C. 112 (pre-AIA)], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

3. Claims 16-18 are rejected under 35 U.S.C. 112(d) or pre-AIA 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends. Claims 16 and 18 recited an article of manufacture to performed the methods of claim 1. Claim 16 recited a data transmission signal having computer code to perform the method of claim 1. Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit http://www.uspto.gov/forms/. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more

information about eTerminal Disclaimers, refer to

http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

4. Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 8,473,478. Although the claims at issue are not identical, they are not patentably distinct from each other because both applications deal with monitoring the operating file and proximately before the execution of the command to the operating file an archive file of the operating file was created and stored. The claims in the limitations in the patent ending with 478 content the additional step after the creation and stored of the archive file. Thus, one ordinary skill in the art would be able to modify and arrive to the same invention as being claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshisaka (US. Patent No. 6,629,109 B1) in view of Dunphy et al. (US. Patent 5,638,509).

As to claim 1, (Original) Koshisaka discloses in a computing device, a method for archiving files comprising:

detecting an instruction from a resident program to perform an operation on an operating file (the file manipulation monitoring section 21 of the file revision management system 2 detects file manipulation which is going to be executed by the application 1 step Si…) (col. 6, lines 32-43).

Although, Koshisaka does not explicitly teach capturing the operating file temporally proximate to the operation being performed on the operating file, responsive to the detection of the instruction. However, Koshisaka teaches “the file manipulation monitoring section 201 constantly monitors API (Application Program Interface) commands which are outputted by the application 1 to the operating system 3 and thereby detects the file manipulation which is (going to be) executed by the application 1…In the case wherein the file manipulating is “file deletion” (“Yes” in the step S2), the file manipulation monitoring section 21 instructs the processing section 22 to store a “deleted file name” and a corresponding “backup file name” in the deleted file name memory section 23 (step 23). The deleted file name is the name of the file (to be) deleted by the application 1.” (col. 6, lines 35-54). This teaches the monitoring program send out the instruction to save the deleted file to the backup memory right at the time the program can execute the delete application. On the other hand, Dunphy also discloses capturing the operating file temporally proximate to the operation being performed on the operating file, responsive to the detection of the instruction (col. 3,

lines 50-67 and col. 4, lines 1-10). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Koshisaka's system to include storing the original file in the memory as taught in Koshisaka in order to allow the user to retrieve latter on when needed.

As to claim 2, (Original) Koshisaka discloses the method of claim 1 wherein capturing the operating file includes creating an archive file and storing the archive file in a storage location (col. 6, lines 35-45).

As to claim 3, (Original) Koshisaka discloses the method of claim 2 wherein the archive file includes a copy of the operating file (col. 6, lines 35-45).

As to claim 4, (Original) Koshisaka discloses the method of claim 2 excepting for wherein the archive file includes portions of the operating file. However, Dunphy discloses wherein the archive file includes portions of the operating file (the data file monitor 11 creates entries in event log 12 that identifies the data directory/data file, the nature of the change, extent of the data file, the time that this change occurred and any other pertinent administrative information…) (col. 4, lines 33-37). This suggests the event log creating entry containing the changes of the file. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Koshisaka's system to include the entry containing changes to the file as taught in Dunphy in order to provide the system retrieve and restore partial of the file in the event of users change their mind.

As to claim 5, (Original) Koshisaka discloses the method of claim 4 excepting for wherein the archive file includes pointers directed to one or more storage locations, wherein each of the one or more second storage locations contains at least a portion of the operating file. However, Dunphy discloses wherein the archive file includes pointers directed to one or more storage locations, wherein each of the one or more second storage locations contains at least a portion of the operating file (a database 14 located in the data storage and protection apparatus 10 retrieves the event log 12 and uses the information contain therein to identify data files that are to be transmitted to a data file backup media 21 for storage. The database also contains a complete history of all data file changes since it stores the event log entries in its history file) (col. 4, lines 41-46). This suggests the database 14 is the second storage having different entries of a file. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Koshisaka's system to include the entry containing changes to the file as taught by Dunphy in order to provide the system retrieve and restore partials of the file from the event log in the event of users change their mind.

As to claim 6, (Original) Koshisaka discloses the method of claim 2 excepting for wherein capturing the file includes saving the archive file prior to the operation being performed on the operating file. However, Dunphy discloses wherein capturing the file includes saving the archive file prior to the operation being performed on the operating file (the data file monitor 11 creates entries in event log 12 that identifies the data directory/data file, the nature of the change, extent of the data file, the time that this

change occurred and any other pertinent administrative information…) (col. 4, lines 33-37). This suggests the event log creating entry containing the changes of the file, is the saving the archive file prior the executing the instruction. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Koshisaka's system to include the entry containing changes to the file as taught in Dunphy in order to provide the system retrieve and restore partial of the file in the event of users change their mind.

As to claim 7, (Original) Koshisaka discloses the method of claim 6 excepting for wherein capturing the file includes saving the archive file subsequent to detecting the instruction to perform the operation. However, Dunphy discloses wherein capturing the file includes saving the archive file subsequent to detecting the instruction to perform the operation (the data file monitor 11 creates entries in event log 12 that identifies the data directory/data file, the nature of the change, extent of the data file, the time that this change occurred and any other pertinent administrative information…) (col. 4, lines 33-37). This suggests the event log creating entry containing the changes of the file, is the saving the archive file prior the executing the instruction. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Koshisaka's system to include the entry containing changes to the file as taught in Dunphy in order to provide the system retrieve and restore partial of the file in the event of users change their mind.

As to claim 8, (Original) Koshisaka discloses the method of claim 2 wherein capturing the file includes saving the archive file subsequent to the operation being performed on the operating file. However, Dunphy discloses wherein capturing the file includes saving the archive file subsequent to the operation being performed on the operating file (the data file monitor 11 creates entries in event log 12 that identifies the data directory/data file, the nature of the change, extent of the data file, the time that this change occurred and any other pertinent administrative information…) (col. 4, lines 33-37). This suggests the event log creating entry containing the changes of the file, is the saving the archive file prior the executing the instruction. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Koshisaka's system to include the entry containing changes to the file as taught in Dunphy in order to provide the system retrieve and restore partial of the file in the event of users change their mind.

As to claim 9, (Original) Koshisaka discloses the method of claim 2 wherein the storage location includes a buffer (col. 5, lines 55-65).

As to claim 10, (Original) Koshisaka discloses the method of claim 2 wherein the first storage location includes a storage device (col. 6, lines 32-65).

As to claim 11, (Original) Koshisaka discloses the method of claim 10 wherein the storage device includes at least one of a group comprising a magnetic storage

medium, an optical storage medium, and a solid-state storage device (col. 6, lines 32-65).

As to claim 12, (Original) Koshisaka discloses the method of claim 10 wherein the storage location includes a directory disposed on said storage device (col. 6, lines 32-65).

As to claim 13, (Original) Koshisaka discloses the method of claim 1 excepting for determining whether the operating file is intended to be captured prior to said capturing step. Dunphy teaches "if a data change is detected, at step 34, the data file monitor 11 extracts data file status activity information from the received communications and uses this data to maintain an event log 12 indicate a history of all presently occurring data file activity on the computer system1…" (col. 3, lines 64-67 to col. 4, lines 1-21). This suggests that the event log 12 storing the file prior the change made to the file. Therefore, would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Koshisaka's system to include the entry containing changes to the file as taught in Dunphy in order to provide the system retrieve and restore partial of the file in the event of users change their mind.

As to claim 14, (Original) Koshisaka discloses the method of claim 1 further comprising determining whether the operating file has previously been captured prior to capturing the file (col. 6, lines 32-65).

As to claim 15, (Original) Koshisaka discloses the method of claim 1 wherein the operation causes a change in the operating file (delete) (col. 6, lines 35-54).

As to claim 16, (Original) Koshisaka discloses an article of manufacture comprising a computer usable medium having computer readable program code for performing the method of claim 1 (an storage unit such as memory, an HDD (Hard Disk Drive), etc) (col. 5, lines 60-62).

As to claim 17, (Original) Koshisaka discloses a data transmission signal having computer readable program code for performing the method of claim 1 ((Hard Disk Drive), etc) (col. 5, lines 60-62).

As to claim 18, (Original) Koshisaka discloses an article of manufacture comprising a processor configured to perform the method of claim 1 an storage unit such as memory, an HDD (Hard Disk Drive), etc) (col. 5, lines 60-62).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 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 –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 19-20 are rejected under pre-AIA 35 U.S.C. 102(b) as being unpatentable over Dunphy (US. Patent No. 5,638,509).

As to claim 19, (Original) In a computing device, a method for moving files from a first storage location to a second storage location comprising:

searching a first storage location for files responsive to the occurrence of a first event (the database 14 located in the data storage and protection apparatus 10 retrieves the event log 2) (col.4, lines 40-42);

moving the files from the first storage location to the second storage location responsive to a second event (uses the information contained therein to identify data files that are to be transmitted to data file backup media 21 for storage) (col. 4, lines 43-45).

As to claim 20, (Original) Dunphy discloses the method of claim 19 wherein the first storage location includes a buffer (log) (col. 4, lines 24-34).

21-51. (Cancelled)

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BAOQUOC N. TO whose telephone number is (571)272-4041. The examiner can normally be reached on 9:00 - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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

/BAOQUOC N TO/
Primary Examiner, Art Unit 2162

Notice of References Cited	Application/Control No. 13/925,768	Applicant(s)/Patent Under Reexamination ROACH ET AL.	
	Examiner BAOQUOC N. TO	Art Unit 2162	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,629,109	09-2003	Koshisaka, Yoshihiro	1/1
*	B	US-5,638,509	06-1997	Dunphy et al.	714/20
	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	
	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.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	Art Unit
	BAOQUOC N TO	2162

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	10/20/2013								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
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	36	-								

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	Art Unit
	BAOQUOC N TO	2162

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	10/20/2013								
	37	-								
	38	-								
	39	-								
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	49	-								
	50	-								
	51	-								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13925768	ROACH ET AL.
	Examiner	Art Unit
	BAOQUOC N TO	2162

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
707	672	10/21/2013	Bto

SEARCH NOTES		
Search Notes	Date	Examiner
Text search - (USPAT, USPGPUB, EPO, JPO, DERWENT, IBM_TDB)	10/21/2013	Bto
Inventor search - PALM related cases	10/21/2013	Bto

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

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	27	707/762.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/10/21 04:18
L2	2571	(monitor$3 with ((chang$3 or modif$7 or delet$4) near2 file$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/10/21 04:19
L3	18	(monitor$3 with ((chang$3 or modif$7 or delet$4) near2 file$1)) same ((captur$3 or (back$3 near2 up)) with (before or after or prior or subsequent) with ((chang$3 or modif$7 or delet$4) near2 file$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/10/21 04:22
L4	1	3 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/10/21 04:22
L5	0	3 and (@ad<"20000921" or @rlad<"20000921") and 707/672.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/10/21 04:23
L6	37	(monitor$3 with ((chang$3 or modif$7 or delet$4) near2 file$1)) same ((captur$3 or archiv$3 or (back$3 near2 up)) with (before or after or prior or subsequent) with ((chang$3 or modif$7 or delet$4) near2 file$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/10/21 04:23
L7	37	(monitor$3 with ((chang$3 or modif$7 or delet$4) near2 file$1)) same ((captur$3 or archiv$3 or (back$3 near2 up)) with (before or after or prior or subsequent) with ((chang$3 or modif$7 or delet$4 or edit$4) near2 file$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/10/21 04:24
L8	18	6 and (@ad<"20000921" or @rlad<"20000921")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/10/21 04:57

EAST Search History (Interference)

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BIB DATA SHEET

CONFIRMATION NO. 1803

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
13/925,768	06/24/2013 RULE	707	2162	6982-2-CON

APPLICANTS

INTEGRITY PC INNOVATIONS, INC., Colorado Springs, CO, Assignee (with 37 CFR 1.172 Interest);
Warren Roach, Colorado Springs, CO;
Steven R. Williams, Colorado Springs, CO;
Troy J. Reiber, Colorado Springs, CO;
Steven C. Burdine, Middleton, WI;

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

This application is a CON of 09/957,459 09/21/2001 PAT 8473478
which claims benefit of 60/234,221 09/21/2000

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

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
07/16/2013

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /BAOQUOC N TO/ Examiner's Signature	☐ Met after Allowance bto Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		CO	6	20	2

ADDRESS

ASPIRE IP
24 S. Weber Street
Suite 300
Colorado Springs, CO 80903
UNITED STATES

TITLE

AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

FILING FEE RECEIVED		
800	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

BIB (Rev. 05/07).

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/925,768
				Filing Date	June 24, 2013
				First Named Inventor	Warren Roach
(Use as many sheets as necessary)				Art Unit	2162
				Examiner Name	TO, Baoquoc N.
Sheet	1	of	1	Attorney Docket Number	6982-2-CON

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	5276867	01/04/1994	Kenley et al.	
	2	5608865	03/04/1997	Midgley et al.	
	3	5638059	06/10/1997	Pilkington	
	4	5638509	06/10/1997	Dunphy et al.	
	5	5668991	09/16/1997	Dunn et al.	
	6	5751997	05/12/1998	Kullcik et al.	
	7	5765173	06/09/1998	Cane et al.	
	8	5978815	11/02/1999	Cabrera et al.	
	9	6023710	02/08/2000	Steiner et al.	
	10	6047294	04/04/2000	Deshayes et al.	
	11	6101507	08/08/2000	Cane et al.	
	12	6460055	10/01/2002	Midgley et al.	
	13	6535894	03/18/2003	Schmidt et al.	
	14	6629109	09/30/2003	Koshisaka	
	15	7117371	10/03/2006	Parthasarathy et al.	
	16	8473478	06/25/2013	Roach et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	Group Art Unit: 2162
ROACH et al.	Confirmation No.: 1803
Serial No.: 13/925,768	Examiner: TO, Baoquoc N.
Filed: June 24, 2013	
Atty. File No.: 6982-2-CON	
Entitled: "AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS"	***Submitted Via EFS-Web***

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

SUBMISSION OF INVENTOR DECLARATION

Dear Sir/Madam:

In response to the Informational Notice to Applicant mailed October 1, 2013, in connection with the above-identified application, enclosed for filing is a Declaration executed by inventor Troy Reiber.

While no fees are believed to be due with the submission of this document, if fees are deemed necessary, please charge the amount to the credit card on file.

Respectfully submitted,

ASPIRE IP

By: /Scott J. Hawranek/
Scott J. Hawranek
Registration No. 52,411
24 South Weber, Suite 300
Colorado Springs, Colorado 80903
(719) 344-9907

Date: October 30, 2013

PTO/AIA/01 (06-12)
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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

As the below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application, or

☒ United States application or PCT international application number 13/925,768 filed on June 24, 2013.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Troy Reiber Date (Optional): 8/30/2013

Signature: Troy Reiber

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Electronic Acknowledgement Receipt

EFS ID:	17274651
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Scott Joseph Hawranek
Filer Authorized By:	
Attorney Docket Number:	6982-2-CON
Receipt Date:	30-OCT-2013
Filing Date:	24-JUN-2013
Time Stamp:	22:25:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		2013-10-30_IDS_01.pdf	212778 c3f9e4ae52554e329cf8fc21b3af67e4dc5b0e2a	yes	4

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	3
	Information Disclosure Statement (IDS) Form (SB08)	4	4

Warnings:					
Information:					
2	Transmittal Letter	2013-10-30_Submission_of_Declaration.pdf	109169 d7479534888eab8022fb13b095cdd66a9eca6f4c	no	1
Warnings:					
Information:					
3	Oath or Declaration filed	Executed_Declaration_Reiber.pdf	383420 2f69447e38c8d38bd3bc66fa9ee666016767c61b	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	705367		

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

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

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: ROACH et al. Serial No.: 13/925,768 Filed: June 24, 2013 Atty. File No.: 6982-2-CON Entitled: "AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS"	Group Art Unit: 2162 Confirmation No.: 1803 Examiner: TO, Baoquoc N. Customer No. **104600**

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

INFORMATION DISCLOSURE STATEMENT

Dear Sir/Madam:

The references cited on attached Form PTO/SB08 are being called to the attention of the Examiner.

☐ Copies of the cited non-patent and/or foreign references are enclosed herewith.

☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.

☒ Copies of the cited U.S. patents/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).

☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

☐ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.

☐ Examiner's attention is drawn to the following related applications:

Serial No. _____ filed _____ (Attorney Ref. No. _____)

Serial No. _____ filed _____ (Attorney Ref. No. _____)

☐ Other:_____

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents

analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☒	**37 CFR 1.97(b)**: No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, or ☒ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please contact undersigned counsel.
☐	**37 CFR 1.97(c)**: The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of any one of the following conditions: (1) a final action under 37 C.F.R. 1.113, or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). OR ☐ The amount of $180.00/$90.00/$45.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement is submitted herewith via EFS-web.
☐	**37 CFR 1.97(d)**: This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. The amount of $180.00/$90.00/$45.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement is submitted herewith via EFS-web. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))
(Applicable only if checked)

☐ The undersigned certifies that:

☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

ASPIRE IP

By: /Scott J. Hawranek/
Scott J. Hawranek
Registration No. 52,411
24 South Weber, Suite 300
Colorado Springs, Colorado 80903
(719) 344-9907

Date: October 30, 2013

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
13/925,768	06/24/2013	Warren Roach	6982-2-CON

CONFIRMATION NO. 1803

104600
ASPIRE IP
24 S. Weber Street
Suite 300
Colorado Springs, CO 80903

PUBLICATION NOTICE

OC000000064583427

Title:AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

Publication No.US-2013-0282665-A1
Publication Date:10/24/2013

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 13/925,768

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))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*	x 210 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	730		TOTAL	

APPLICATION AS AMENDED - PART II

		(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($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	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	

		(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($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	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 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	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
13/925,768	06/24/2013	2161	800	6982-2-CON	20	2

CONFIRMATION NO. 1803

104600
ASPIRE IP
24 S. Weber Street
Suite 300
Colorado Springs, CO 80903

UPDATED FILING RECEIPT

OC000000063985418

Date Mailed: 10/01/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Warren Roach, Colorado Springs, CO;
Steven R. Williams, Colorado Springs, CO;
Troy J. Reiber, Colorado Springs, CO;
Steven C. Burdine, Middleton, WI;

Applicant(s)

INTEGRITY PC INNOVATIONS, INC., Colorado Springs, CO

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 09/957,459 09/21/2001 PAT 8473478
which claims benefit of 60/234,221 09/21/2000

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 07/16/2013
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/925,768**
Projected Publication Date: 10/24/2013
Non-Publication Request: No
Early Publication Request: No
** **SMALL ENTITY** **

Title

AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

Preliminary Class

707

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

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
13/925,768	06/24/2013	Warren Roach	6982-2-CON

CONFIRMATION NO. 1803

104600
ASPIRE IP
24 S. Weber Street
Suite 300
Colorado Springs, CO 80903

NOTICE

OC000000063985419

Date Mailed: 10/01/2013

INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
  Troy J. Reiber
  Applicant may submit the inventor's oath or declaration at any time before the Notice of Allowance and Fee(s) Due, PTOL-85, is mailed.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	Group Art Unit: 2161
ROACH et al.	Confirmation No.: 1803
Serial No.: 13/925,768	Examiner: Not yet assigned
Filed: June 24, 2013	
Atty. File No.: 6982-2-CON	
Entitled: "AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS"	***Submitted Via EFS-Web***

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

RESPONSE TO NOTICE TO FILE MISSING PARTS

Dear Sir/Madam:

In response to the Notice to File Missing Parts of Nonprovisional Application mailed July 19, 2013, in connection with the above-identified application, enclosed for filing are executed Declarations by the inventors and the surcharge in the amount of $70.00 for a small entity.

While no other fees are believed due, if additional fees are deemed necessary, please charge the amount to the credit card used for this transaction.

Respectfully submitted,

ASPIRE IP

By: /Scott J. Hawranek/
Scott J. Hawranek
Registration No. 52,411
24 South Weber, Suite 300
Colorado Springs, Colorado 80903
(719) 344-9907

Date: September 19, 2013

Electronic Patent Application Fee Transmittal

Application Number:	13925768
Filing Date:	24-Jun-2013
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Filer:	Scott Joseph Hawranek
Attorney Docket Number:	6982-2-CON

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Late Filing Fee for Oath or Declaration	2051	1	70	70
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
		Total in USD ($)		**70**

Electronic Acknowledgement Receipt

EFS ID:	16894898
Application Number:	13925768
International Application Number:	
Confirmation Number:	1803
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Scott Joseph Hawranek
Filer Authorized By:	
Attorney Docket Number:	6982-2-CON
Receipt Date:	19-SEP-2013
Filing Date:	24-JUN-2013
Time Stamp:	14:43:31
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$70
RAM confirmation Number	1183
Deposit Account	
Authorized User	

File Listing:

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

1	Oath or Declaration filed	Executed_Declaration_Burdine.pdf	430625 534c99a102b31dc9dc075cf2c9c6451a0ce1b608	no	1
Warnings:					
Information:					
2	Oath or Declaration filed	Executed_Declaration_Roach.pdf	379234 70da09e067767426f33ef0a33354944a66f5e84c	no	1
Warnings:					
Information:					
3	Oath or Declaration filed	Executed_Declaration_Williams.pdf	952478 6335c359e0d9d0fbb3b8ff4da368a112fbdcf952	no	2
Warnings:					
Information:					
4	Applicant Response to Pre-Exam Formalities Notice	2013-09-19_Response_to_Missing_Parts.pdf	108981 166e14b8fe8d3d800dd077890a40a0534eac5337	no	1
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	30417 c1a3c55f94fc689cea9a5026b62a32660e70cea3	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1901735		

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.

PTO/AIA/01 (06-12)
Approved for use through 01/31/2014 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.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

As the below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application, or

☒ United States application or PCT international application number 13/925,768 filed on June 24, 2013.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Steven C. Burdine Date (Optional): 9/3/2013

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

PTO/AIA/01 (06-12)
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LEGAL NAME OF INVENTOR

Inventor: Warren Roach Date (Optional): 8/24/2013

Signature: W. P. Roach

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PTO/AIA/01 (06-12)
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I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

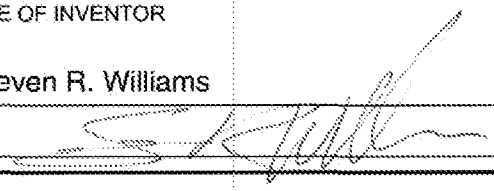
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

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LEGAL NAME OF INVENTOR

Inventor: Steven R. Williams Date (Optional): 2 SEP 2013

Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
13/925,768	06/24/2013	2161	730	6982-2-CON	20	2

CONFIRMATION NO. 1803

104600
ASPIRE IP
24 S. Weber Street
Suite 300
Colorado Springs, CO 80903

FILING RECEIPT

OC000000062616729

Date Mailed: 07/19/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Warren Roach, Colorado Springs, CO;
Steven R. Williams, Colorado Springs, CO;
Troy J. Reiber, Colorado Springs, CO;
Steven C. Burdine, Middleton, WI;

Applicant(s)

INTEGRITY PC INNOVATIONS, INC., Colorado Springs, CO

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 09/957,459 09/21/2001 PAT 8473478
which claims benefit of 60/234,221 09/21/2000

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 07/16/2013
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/925,768**
Projected Publication Date: 10/24/2013
Non-Publication Request: No
Early Publication Request: No
** **SMALL ENTITY** **

Title

AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS

Preliminary Class

707

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 13/925,768

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))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*	x 210 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	730		TOTAL	

APPLICATION AS AMENDED - PART II

		(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($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	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	

		(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($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	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 found in the appropriate box in column 1.

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Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/925,768	06/24/2013	Warren Roach	6982-2-CON

CONFIRMATION NO. 1803

104600
ASPIRE IP
24 S. Weber Street
Suite 300
Colorado Springs, CO 80903

FORMALITIES LETTER

OC000000062616730

Date Mailed: 07/19/2013

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

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 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).

- A surcharge (for late submission of the basic filing fee, search fee, examination fee or inventor's oath or declaration) as set forth in 37 CFR 1.16(f) of $ **70** for a small entity in compliance with 37 CFR 1.27, must be submitted.

SUMMARY OF FEES DUE:

Total fee(s) required within **TWO MONTHS** from the date of this Notice is $ **70** for a small entity
- $ **70** Surcharge.

Items Required To Avoid Processing Delays:

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
  Warren Roach
  Steven R. Williams
  Troy J. Reiber
  Steven C. Burdine

  Applicant may submit the inventor's oath or declaration at any time before the Notice of Allowance and Fee(s) Due, PTOL-85, is mailed.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	Group Art Unit: Not yet assigned
ROACH et al.	Confirmation No.: Not yet assigned
Serial No.: Not yet assigned	Examiner: Not yet assigned
Filed: Herewith	
Atty. File No.: 6982-2-CON	Customer No. **104600**
Entitled: "AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS"	***Submitted via EFS-Web***

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

PRELIMINARY AMENDMENT

Dear Sir/Madam:

Prior to the initial review of the above-identified patent application by the Examiner, please enter the following Preliminary Amendment.

Amendments to the Specification begin on page **2** of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page **3** of this paper.

Remarks begin on page **5** of this paper.

AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph **[0001]** with the following amended paragraph:

[0001] This application is a continuation of U.S. Patent Application No. 09/957,459 filed September 21, 2001, which claims the benefit of U.S. Provisional Application No. 60/234,221 filed Sep. 21, 2000, each of which is herein incorporated by reference.

AMENDMENTS TO THE CLAIMS

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

Listing of Claims:

1. (Original) In a computing device, a method for archiving files comprising:

detecting an instruction from a resident program to perform an operation on an operating file; and

capturing the operating file temporally proximate to the operation being performed on the operating file, responsive to the detection of the instruction.

2. (Original) The method of claim 1 wherein capturing the operating file includes creating an archive file and storing the archive file in a storage location.

3. (Original) The method of claim 2 wherein the archive file includes a copy of the operating file.

4. (Original) The method of claim 2 wherein the archive file includes portions of the operating file.

5. (Original) The method of claim 4 wherein the archive file includes pointers directed to one or more storage locations, wherein each of the one or more second storage locations contains at least a portion of the operating file.

6. (Original) The method of claim 2 wherein capturing the file includes saving the archive file prior to the operation being performed on the operating file.

7. (Original) The method of claim 6 wherein capturing the file includes saving the archive file subsequent to detecting the instruction to perform the operation.

8. (Original) The method of claim 2 wherein capturing the file includes saving the archive file subsequent to the operation being performed on the operating file.

9. (Original) The method of claim 2 wherein the storage location includes a buffer.

10. (Original) The method of claim 2 wherein the first storage location includes a storage device.

11. (Original) The method of claim 10 wherein the storage device includes at least one of a group comprising a magnetic storage medium, an optical storage medium, and a solid-state storage device.

12. (Original) The method of claim 10 wherein the storage location includes a directory disposed on said storage device.

13. (Original) The method of claim 1 further comprising determining whether the operating file is intended to be captured prior to said capturing step.

14. (Original) The method of claim 1 further comprising determining whether the operating file has previously been captured prior to capturing the file.

15. (Original) The method of claim 1 wherein the operation causes a change in the operating file.

16. (Original) An article of manufacture comprising a computer usable medium having computer readable program code for performing the method of claim 1.

17. (Original) A data transmission signal having computer readable program code for performing the method of claim 1.

18. (Original) An article of manufacture comprising a processor configured to perform the method of claim 1.

19. (Original) In a computing device, a method for moving files from a first storage location to a second storage location comprising:

searching a first storage location for files responsive to the occurrence of a first event;

moving the files from the first storage location to the second storage location responsive to a second event.

20. (Original) The method of claim 19 wherein the first storage location includes a buffer.

21-51. (Cancelled)

REMARKS/ARGUMENTS

The present Preliminary Amendment is submitted to update the priority claim information and cancel excess claims. By this Amendment, claims 21-51 have been cancelled without prejudice or disclaimer to the subject matter contained therein. Accordingly, claims 1-20 are currently pending in the application. No new matter has been added.

Should the Examiner feel that there are any issues outstanding after consideration of this response; the Examiner is invited to contact the Applicant's undersigned representative at the number below to expedite prosecution.

Respectfully submitted,

HAWRANEK PC

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Date: June 24, 2013

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Filer:	Scott Joseph Hawranek
Attorney Docket Number:	6982-2-CON

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**730**

Electronic Acknowledgement Receipt

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Application Number:	13925768
International Application Number:	
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Title of Invention:	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS
First Named Inventor/Applicant Name:	Warren Roach
Customer Number:	104600
Filer:	Scott Joseph Hawranek
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Receipt Date:	24-JUN-2013
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Payment Type	Credit Card
Payment was successfully received in RAM	$730
RAM confirmation Number	10310
Deposit Account	
Authorized User	

File Listing:

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

1		2013-06-24_Patent_Application.pdf	1048964 f26c839420f7bdbd6e269c31c3e8b675182f8284	yes	30

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Specification	1	17
	Claims	18	23
	Abstract	24	24
	Drawings-only black and white line drawings	25	30

Warnings:

Information:

2	Application Data Sheet	2013-06-24_ADS.pdf	1255986 8604b21221e87fc619ab71f2efee7e08be372f38	no	7

Warnings:

Information:

3		2013-06-24_Preliminary_Amendment.pdf	153400 277d0b95f396c09c84615bee45e30b4b51e46169	yes	5

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Preliminary Amendment	1	1
	Specification	2	2
	Claims	3	4
	Applicant Arguments/Remarks Made in an Amendment	5	5

Warnings:

Information:

4	Fee Worksheet (SB06)	fee-info.pdf	33166 5032689a3e5464034bff5c1035bd88ab67de404a	no	2

Warnings:

Information:

Total Files Size (in bytes):	2491516

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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.

APPARATUS AND METHOD FOR FILE CAPTURE, PRESERVATION AND MANAGEMENT

[0001] This application claims the benefit of Provisional Application No. 60/234,221 filed September 21, 2000, which is herein incorporated by reference.

Field of the Invention

[0002] This invention relates to file preservation, file capture, file management and file integrity techniques for computing devices.

Background of the Invention

[0003] One of the greatest challenges faced by information technology (IT) professionals and computer users today, particularly in the business environment is the protection and management of data. Data may be stored on user workstations, e.g., laptop computers, home or office desktop computers, network servers or other devices external to the workstations. Important data may even be stored on hand-held computing devices such as PDAs, PALs and other like devices. Complicating the problem is the fact that the criticality of data is increasing and the difficulty of managing it, protecting it from loss and keeping it available is increasing. This is due to a variety of factors, including: 1) the explosion in data volume, particularly that stored on desktop and laptop computers, 2) the increasing complexity of desktop and laptop computer software and hardware and increasing trends toward a paperless environment were absolute reliance (because paper copies are becoming less the norm) on data integrity is increasingly significant.

[0004] Many home computer users do not realize the vulnerability of their computer data. Many that do understand the very real potential for data loss, purchase backup

systems whose operation and user interface is often confusing and/or time-consuming to use, dramatically decreasing their effectiveness or dependability. As a result, many computer users remain very much at risk of data loss resulting from hardware and/or software failures, fires, stolen equipment, etc. While these risks are significant, the most frequent cause of data loss is user error (accidental file deletes, file overwrites, errant programs, etc.), to which users remain very vulnerable even with most present day backup systems.

[0005] The financial impact of information loss is substantial. As reported by the Safeware Insurance Agency, in 1999 alone, insurance claims for damaged, lost and stolen computers (primarily notebook computers) totaled more than $1.9 billion. This figure does not include the untold billions lost in intellectual capital and time. It is costly to recreate lost data and there are significant related costs such as lost productivity and lost opportunity. Consider, for example, the financial and health related impact of a doctor losing all patient contact information and medical histories due to a hard disk crash or some other type of computer failure. In addition, it is costly to keep desktop and laptop computers up and running in the wake of their increasing complexity.

[0006] A variety of products have been developed to address data preservation and integrity issues. These products may be loosely grouped into three categories, manual backup systems, schedule based backup systems and mirroring backup systems.

[0007] The least efficient and probably one of the most frequently used backup systems is the manual backup. At times determined by the user, the user selects files to be backed up and either utilizes the built in backup procedure for the corresponding application or manually copies the selected files to a desired backup storage media.

[0008] The problems with this method of preserving data are self-evident. Backup procedures are often confusing and may differ from application to application. Accordingly, the user must familiarize itself with the various methods for performing backups. In addition, users may forget to backup or elect not to on a given occasion due to time constraints or other reasons. Manual backups often do not allow the user to continue to use the system during the backup procedure. Furthermore, data stored to the backup media is really only a "snapshot" of the data at the time that the backup is performed. Any changes made between manual backups would be lost if there was a failure on the computer's storage device.

[0009] Schedule based backup systems typically perform backups according to a schedule either set by the user or preset by the backup software. One of the major disadvantages of each type of schedule-based backup system is that as with manual backups, they miss work done between schedule points. This may cause the user to loose critical information as they work between schedule points. Another disadvantage of schedule-based backups systems is that they are frequently confusing and cumbersome for the user. Still another disadvantage of schedule-based backup systems is that they function poorly if at all when the backup storage device is unavailable, i.e., they cannot be written to due to a communications error or because the device has reached its capacity, is bandwidth limited, or is non-operational for some other reason.

[0010] Mirroring is a technique typically applied to disk based backup systems. Mirroring backup systems are the most comprehensive in that everything that happens to the source storage device immediately happens to the backup storage device. That

is the backup drive becomes a mirror image of the source drive. Accordingly, if a failure occurs on the source disk, processing can be switched to the backup disk with little or no service interruption.

[0011] The strongest advantage of mirroring systems is also their strongest disadvantage. Because there is no operational discrimination, if a file is accidentally deleted from the source disk, it is deleted and cannot be preserved on the backup disk. Likewise, if a virus infects the source disk it is likely to infect the backup disk. Another disadvantage of mirroring systems is that separate backup disks are required for each source disk, doubling the disk requirement for the system. The backup disk must be at least as large as the source disk and the disks must be configured with identical volume mapping. Any extra space that may be present on the backup disk is unavailable.

[0012] All of these methods require that the user specify which files/directories to back up, but many users have no concept of files and directories in their thought process, much less are they able to correlate a particular application (e.g. Microsoft Excel) with the kinds and locations of files they generate. These systems simply require too much user knowledge, and too much user intervention. The backup user's risk increases dramatically the lower his computer knowledge may be.

[0013] In view of the foregoing, there is a need for a file capture, preservation and management system that captures files just before and/or just after they have been changed to minimize loss of data between backup events. There is also a need for file capture and preservation system that captures files even when the destination storage medium for the files is unavailable. There is a further need for a system that allows users to recover easily and quickly from any type of information loss, including simple

user errors, failed software installations or updates, hardware failures (attached storage devices), and lost or stolen laptop computers. Users should be able to recover on their own, without the intervention of the IT staff, and their backup systems should be as "behind the scenes" as possible, requiring little user attention and extremely small amounts of user computer knowledge.

Summary of the Invention

[0014] It is an object of the invention to a file capture, preservation and management method and apparatus that captures files just before and/or just after the files are changed.

[0015] It is another object of the invention to provide a file capture, preservation and management method and apparatus that has an imperceptible impact on system performance from the user's point of view.

[0016] It is a further object of the invention to provide a file capture, preservation and management method and apparatus that captures and stores files even when there is no connection to the desired storage location.

[0017] Still another object of the invention is to provide a file capture, preservation and management method and apparatus that captures and stores files even when the desired storage location is unavailable.

[0018] In accordance with an aspect of the invention, a method for archiving files is provided. The method includes, in a computing device, detecting an instruction from a resident program to perform an operation on an operating file. Upon detection of the instruction, capturing the operating file temporally proximate to the operation being performed on the operating file.

[0019] In accordance with another aspect of the invention, a method for moving files from a first storage location to a second storage location is provided. The method includes, in a computing device, searching a first storage location for files responsive to the occurrence of a first event and moving the files from the first storage location to the second storage location responsive to a second event.

[0020] In accordance with still another aspect of the invention, a method for archiving files is provided. The method includes detecting an instruction from a resident program to perform an operation on an operating file. The method further includes creating an archive file from the operating file and storing the archive file in a first storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction. In keeping with the method, the first storage location is searched for an archive file responsive to the occurrence of a first event. The archive file is then moved from the first storage location to the second storage location responsive to a second event.

[0021] The accompanying figures show illustrative embodiments of the invention from which these and other of the objectives, novel features and advantages will be readily apparent.

Brief Description of the Drawings

[0022] Figure 1 illustrates a block diagram of a computing device in accordance with the present invention.

[0023] Figure 2A is a flow chart depicting a process for moving files in accordance with the present invention.

[0024] Figure 2B is a flow chart showing another process for moving files in accordance with the invention.

[0025] Figure 3 is a time line illustrating a sequence of events in an exemplary operation in accordance with the invention.

[0026] Figure 4 is a time line illustrating a sequence of events in another exemplary operation in accordance with the invention.

[0027] Figure 5 is a time line illustrating a sequence of events in still another exemplary operation in accordance with the invention.

Detailed Description of the Embodiment

DEFINITIONS

[0028] **Operating System (OS)** – A computer program that allocates system resources such as memory, disk space, and processor usage and makes it possible for the computer to boot up to a human user interface allowing the user to interact with the computer and control its operation.

[0029] **Operating File** – a system or user file.

[0030] **Archive File** – a file containing all of the data of an operating file in a native or altered format and/or a file containing at least some of the data of an operating file and including references to the location of the remainder of the data of the operating file.

[0031] **Computing Device** – a personal computer, a laptop or notebook computer, a server, a hand-held computing device, a PDA or a PAL. The term computing device is not specific to the kind of operating system being run on such computing device, and includes devices running Microsoft operating systems, Apple Macintosh operating

systems, UNIX operating systems, Linux operating systems, and other operating systems.

[0032] **Storage Location** – any storage device, or a buffer, folder, directory or designated area on a storage device.

[0033] **Personal Attached Storage Device** -- any internal or external storage device connected to a computing device.

[0034] **Network Attached Storage Device** -- any storage device connected directly to a network to which a first computing device is also temporarily or permanently connected, or any storage device connected to a second computing device that is also temporarily or permanently connected to the network to which the first computing device is temporarily or permanently connected.

[0035] **Internet storage area network** -- any storage area (device, collection of devices, etc.) that can be accessed by the computing device when the computing device is temporarily or permanently connected to the Internet.

[0036] **Peer-to-Peer Storage Device** -- any storage area (device, collection of devices, etc.) that can be accessed by the computing device when it is sharing resources with other network or Internet accessible computers.

[0037] **Resident Program** – an operating system (OS) or other program that has control over file operations such as "read", "write", "save", "rename", "delete", "copy", "move", "open", "close", etc.

[0038] **User Program** – an application software program or other computing program installed by the user or by the computer manufacturer for user creation of desired data, documents, or other information that is designed to enhance the

functionality and/or enjoyment and/or usability of the computing device. The present invention is directed to an apparatus and/or method for file capture, preservation and management. The invention includes a file capture aspect and smart data management aspect. The invention may be realized as a method and/or an apparatus. More particularly, the invention may be realized as a set of program code instructions stored on a computer usable medium, a set of program code instructions embodied in a signal for transmitting computer information, and a processor and/or computing device configured as described herein.

[0039] Figure 1 depicts a block diagram in accordance with the present invention comprising a computing device 5 including a file capture block 10 (or file capturer), a smart data management block 15 (or smart data manager), an input buffer 20, output buffer(s) 25, and a database 30. A storage device 35 is also provided and may be either internal or external to computing device 5. The invention functions in conjunction with a resident program on computing device 5.

[0040] In accordance with an embodiment of the invention, file capture block 10 detects an instruction to perform an operation on an operating file initiated by the resident program of computing device 5. At a moment temporally proximate to when the resident program actually performs the operation, i.e., just before and/or just after the operation is performed on the operating file, or, more preferably, the instant before and/or the instant after the operating file is changed, file capture block 10 captures the operating file or portions thereof. Preferably, the operating file is captured within a few clock cycles of the detection of the instruction.

[0041] In keeping with a preferred aspect of the invention, file capture block 10 causes the location of the captured operating file to be recorded in database 30. The continued process of recording information about captured operating files, or portions thereof, in database 30 creates a record of each version of the operating file, which may be accessed by the user or by other programs.

[0042] File capture is preferably executed by creating an archive file from the operating file. The archive file is preferably stored in a temporary storage location, internal or external to the computer, such as input buffer 20. However, the archive file may be stored directly in storage device 35. In accordance with a preferred aspect of the invention, storage device 35 may be a personal attached storage device, a network attached storage device, an Internet storage area network, a peer-to-peer storage device, or other storage device.

[0043] In keeping with a preferred aspect of the invention, smart data management block 15 manages the migration of the archive file from the input buffer 20 through the output buffers 25 to storage device 35. This migration may take place either synchronously or asynchronously with the file capture procedures described herein. The time duration from a file arriving in input buffer 20 and when it arrives on archive storage device 35 is managed by the smart data management block 15. More particularly smart data management block 15 regularly examines input buffer 20 for the presence of archive files. Smart data management block 15 performs this examination upon the occurrence of an event, e.g., messages from the file capture block 10 and/or various messages from the resident program(s), messages from an input buffer timer sent at time intervals controlled by a timer or at time intervals selected by the user.

Optionally, smart data management block 15 may then examine database 30 to determine a defined storage location for each of the archive files stored in input buffer 20. Each archive file stored in the input buffer 20 may be directed to the same storage location or to different storage locations and archive files may be directed to multiple storage locations for redundancy. Preferably, smart data management block 15 moves the archive files to one or more output buffers 25. More preferably each archive file is moved to output buffer(s) 25 corresponding to the final storage location(s) for that archive file. Alternatively, all archive files may be moved to a single common output buffer 25 if desired. Upon the occurrence of an event, and/or at defined time intervals, smart data management block 15 moves the archive files from the output buffers 25 to their respective storage device(s) 35. Exemplary events include but are not limited to messages indicating when storage device 35 is connected and ready for use, messages indicating when storage device 35 is inserted/removed, full, defective, etc., and messages indicating when storage device 35 is disconnected or unavailable, and messages from a storage device timer sent at time intervals controlled by the timer or at time intervals controlled by the user. The input buffer timer and the storage device timer may operate synchronously or non-synchronously.

[0044] Under certain conditions, smart data management block 15 may be unable, or may elect not to move the archive files. For example, if storage device 35 is unavailable then smart data management block 15 will not move the archive files to storage device 35. Among the conditions that may cause storage device 35 to be unavailable are i) storage device 35 is disconnected from computing device 5, ii) the connection between storage device 35 and computing device 5 is faulty or unacceptably

slow, iii) storage device 35 is full, or iv) storage device 35 is malfunctioning. In addition, smart data management block 15 may also regulate movement of archive files according to time schedules set by the user, by monitoring connection bandwidth availability and moving files only during times of high bandwidth availability, or by monitoring other factors including messages that may received from storage location server requests for archive file transmittal.

[0045] A preferred operational mode for smart data management block 15 is illustrated in the flowcharts of Figures 2A and 2B. In step 100 of Figure 2A, smart data manager 15 examines input buffer 20 to determine whether any archive files are stored therein. If no archive files are present, smart data manager 15 rests idle until the next event occurs. If archive files are detected, in step 105, smart data manager 15 updates database 25 to indicate the location of the archive files; that is, to indicate that the archive files are resident in input buffer 20. In step 110, smart data manager 15 examines database 30 to determine the proper destination for each archive file. In step 115, smart data manager 15 moves the archive files to output buffers 25. In step 120, smart data manager 15 updates database 30 to indicate that the archive files are now stored in the output buffer.

[0046] In Figure 2B in step 125, the archive files are moved to one or more storage devices 30. If smart data manager 15 is unable to move the archive files to any of the storage devices 30, smart data manager 15 rests idle and does not move the archive files until it is notified that the storage device is available. Accordingly, the archive files remain in either input buffer 20 or output buffer 25 until smart data management block

15 is notified. In step 130 smart data manager 15 updates database 25 to indicate that the archive files are stored in one or more storage devices 30.

Use Specific to User Program Operations

[0047] The following examples are directed to embodiments of the invention specific to operations performed by a user program. The file capture, preservation and management processes of the invention are not limited to execution with the exemplary operation discussed below. The processes of the invention are preferably executed when a resident program causes a change or a change to be imminent in the operating file. Therefore, the following examples are intended to be exemplary only and non-limiting.

File Capture at File Open

[0048] As illustrated in Figure 3, in step 205, the user or a program selects an "open" operation to open an operating file and an instruction to perform that "open" operation on the operating file is sent to the resident program. In step 210, file capture block 10 detects the instruction and captures the operating file. Optionally, prior to capturing the operating file, file capture block 10 may check database 30 to a) determine whether the operating file has previously been archived, b) determine whether the user has selected the operating file for protection, or c) determine a match to other defined conditions. If the go-ahead conditions exist, then file capture block 10 creates an archive file and stores the archive file in a storage location such as input buffer 20 or storage device 35 just before the resident program opens the operating file. Preferably, file capture block 10 stores the archive file in input buffer 20. In step 215 the resident program opens the operating file and in step 220 the user program displays the

operating file as originally requested, e.g. Microsoft Word, and makes it available for the user to alter, e.g., edit a word processing document, amend or add to a database, etc. Step 210 is performed by momentarily delaying the execution of step 215 in such a manner as to have little or no perceptible impact on system performance from the user's point of view.

[0049] In step 225, the user program begins a process to save the altered operating file and an instruction to save the altered operating file is sent to the resident program. In step 230 the resident program saves the altered operating file pursuant to the instruction. In step 235, immediately after the altered operating file is saved by the resident program, file capture block 10 captures the altered operating file, preferably by creating and storing an archive file of the altered operating file in input buffer 20. In accordance with a preferred feature of the invention, file capture block 10 may save the archive file in such a way that previous revisions of the operating file are retained. That is, every time the operating file is changed, file capture block 10 saves an archive file and database 30 is updated with information about the archive file. Accordingly, over time, a plurality of archive files may be created from the original operating file. Each archive file represents a revision of the original operating file.

File Capture in the "RENAME" Operation

[0050] As illustrated in Figure 4, step 305, in performing an operating file rename operation, the user or a program generates an instruction for the resident program to select a new name for an old operating file. In step 310, file capture block 10 detects the instruction and captures the old operating file. Optionally, prior to capturing the old operating file, file capture block 10 may check database 30 to a) determine whether the operating file has previously been archived, b) determine whether the user has selected

the operating file for protection, or c) determine a match to other defined conditions. If the go-ahead conditions exist, then file capture block 10 creates an archive file of the old operating file and stores the archive file in a storage location such as storage device 35 or, more preferably, input buffer 20 just before the resident program renames the old operating file. In step 315 the resident program renames the old operating file, thus creating a new operating file. Immediately after the old operating file is renamed, file capture block 10 captures the new operating file. Optionally, prior to capturing the new operating file, file capture block 10 may determine whether the new operating file has previously been archived, whether the user has selected the new operating file for protection, or other matching conditions exist. Like the archive file for the old operating file, the archive file for the new operating file is preferably stored in input buffer 20. In step 325 file capture block 10 and smart data management block 15 associate or link the new operating file with each of the versions of the old operating file to create a continuous operating file revision history.

File Capture in the "Delete" Operation

[0051] Figure 5 illustrates the file capture process in the delete operation. In step 405, the user or a program identifies an operating file to delete and generates an instruction to the resident program. In step 410, file capture block 10 detects the instruction and captures the operating file just before it is deleted in step 415. Optionally, prior to capturing the operating file, file capture block 10 may check database 30 to a) determine whether the operating file has previously been archived, b) determine whether the user has selected the operating file for protection, or c) determine a match to other defined conditions. If the go-ahead conditions exist, then file

capture block 10 preferably captures the operating file. In step 420, the resident program deletes the operating file.

[0052] As shown by the examples given, a clear advantage of the invention is, regardless of the operation being performed, after each file capture step, file capture block 10 preferably updates database 30 to indicate the location of the corresponding archive file. Database 30 may keep track of multiple versions of an operating file, any of which may be accessed at the request of the user or other program.

[0053] Another advantage of the invention is that by capturing the operating file just before and/or just after an operation is performed thereon, the invention achieves near real-time operating file archiving while achieving minimal missed alterations to an operating file.

[0054] A further advantage of the invention in its preferred embodiment, is that by intelligently managing the migration of operating files from the input buffer 20 through the output buffer 25 to the storage device 35, the invention achieves protection of operating files even when the desired storage device is permanently or temporarily unavailable.

Industrial Applicability

[0055] The present invention is suited for any application that requires or benefits from near real time file capture, that seeks improved file integrity and/or that seeks efficient management of file storage. For example, the present invention is particularly useful in backup systems, audit trail systems, computer security systems, systems for monitoring computer users and others.

[0056] Although the present invention has been described in terms of particular preferred embodiments, it is not limited to those embodiments. Alternative embodiments, examples, and modifications which would still be encompassed by the invention may be made by those skilled in the art, particularly in light of the foregoing teachings.

We Claim:

1. In a computing device, a method for archiving files comprising:

detecting an instruction from a resident program to perform an operation on an operating file; and

capturing the operating file temporally proximate to the operation being performed on the operating file, responsive to the detection of the instruction.

2. The method of claim 1 wherein capturing the operating file includes creating an archive file and storing the archive file in a storage location.

3. The method of claim 2 wherein the archive file includes a copy of the operating file.

4. The method of claim 2 wherein the archive file includes portions of the operating file.

5. The method of claim 4 wherein the archive file includes pointers directed to one or more storage locations, wherein each of the one or more second storage locations contains at least a portion of the operating file.

6. The method of claim 2 wherein capturing the file includes saving the archive file prior to the operation being performed on the operating file.

7. The method of claim 6 wherein capturing the file includes saving the archive file subsequent to detecting the instruction to perform the operation.

8. The method of claim 2 wherein capturing the file includes saving the archive file subsequent to the operation being performed on the operating file.

9. The method of claim 2 wherein the storage location includes a buffer.

10. The method of claim 2 wherein the first storage location includes a storage device.

11. The method of claim 10 wherein the storage device includes at least one of a group comprising a magnetic storage medium, an optical storage medium, and a solid-state storage device.

12. The method of claim 10 wherein the storage location includes a directory disposed on said storage device.

13. The method of claim 1 further comprising determining whether the operating file is intended to be captured prior to said capturing step.

14. The method of claim 1 further comprising determining whether the operating file has previously been captured prior to capturing the file.

15. The method of claim 1 wherein the operation causes a change in the operating file.

16. An article of manufacture comprising a computer usable medium having computer readable program code for performing the method of claim 1.

17. A data transmission signal having computer readable program code for performing the method of claim 1.

18. An article of manufacture comprising a processor configured to perform the method of claim 1.

19. In a computing device, a method for moving files from a first storage location to a second storage location comprising:

searching a first storage location for files responsive to the occurrence of a

first event;

moving the files from the first storage location to the second storage location responsive to a second event.

20. The method of claim 19 wherein the first storage location includes a buffer.

21. The method of claim 20 wherein the second storage location includes a storage device.

22. The method of claim 19 wherein the first event includes a message from a timer.

23. The method of claim 19 wherein the first event includes a message from a program resident on the computing device.

24. The method of claim 19 wherein the second event includes a message from a timer.

25. The method of claim 19 wherein the second event includes a message indicating when the second storage location is available.

26. The method of claim 19 further comprising:

after detecting the files, updating a database to indicate that the detected files are located in the first storage location;

determining a destination for each of the detected files;

moving detected files from the first storage location to an intermediate storage location;

updating the database to indicate that the detected files are located in the intermediate storage location; and

after moving the file to the second storage location, updating the database to indicate that the files are located in the second storage location.

27. The method of claim 26 wherein the second storage location includes a personal attached storage device.

28. The method of claim 26 wherein the second storage location includes a network attached storage device.

29. The method of claim 26 wherein the second storage location includes a peer-to-peer storage device.

30. The method of claim 26 wherein the second storage location includes an Internet storage area network.

31. An article of manufacture comprising a computer usable medium having computer readable program code for performing the method of claim 19.

32. A data transmission signal having computer readable program code for performing the method of claim 19.

33. An article of manufacture comprising a processor configured to perform the method of claim 19.

34. In a computing device, a method for archiving files comprising:

detecting an instruction from a resident program to perform an operation on an operating file;

creating an archive file from the operating file and storing the archive file in a first storage location temporally proximate to the operation being performed on the operating file and responsive to detecting the instruction;

searching the first storage location the archive file responsive to the occurrence of a first event; and

moving the archive file from the first storage location to the second storage location responsive to a second event.

35. The method of claim 34 wherein storing the archive file includes storing the archive file prior to the operation being performed on the operating file.

36. The method of claim 35 wherein storing the archive file includes storing the archive file prior to the operation being performed on the operating file and subsequent to the operation being performed on the archive file.

37. The method of claim 34 wherein storing the archive file includes storing the archive file subsequent to the operation being performed on the operating file.

38. The method of claim 34 wherein the first storage location includes a buffer.

39. The method of claim 34 wherein the first event includes a message from a timer.

40. The method of claim 34 wherein the first event includes a message from a program resident on the computing device.

41. The method of claim 34 wherein the second event includes a message from a timer.

42. The method of claim 34 wherein the second event includes a message indicating when the second storage location is available.

43. The method of claim 34 wherein the second storage location is an output buffer.

44. The method of claim 34 further comprising:

after detecting the files, updating a database to indicate that the detected files are located in the first storage location;

determining a destination for each of the detected files;

moving detected files from the first storage location to an intermediate storage location;

updating the database to indicate that the detected files are located in the intermediate storage location; and

after moving the file to the second storage location, updating the database to indicate that the files are located in the second storage location.

45. The method of claim 44 wherein the second storage location includes a personal attached storage device.

46. The method of claim 44 wherein the second storage location includes a network attached storage device.

47. The method of claim 44 wherein the second storage location includes a peer-to-peer storage device.

48. The method of claim 44 wherein the second storage location includes an Internet storage area network.

49. An article of manufacture comprising a computer usable medium having computer readable program code for performing the method of claim 44.

50. A data transmission signal having computer readable program code for performing the method of claim 44.

51. An article of manufacture comprising a processor configured to perform the method of claim 44.

Abstract

A method for archiving files includes determining when a change in an operating file is imminent, capturing the operating file immediately before the change in the operating file occurs, if the operating file has not already been captured; and capturing the operating file immediately after the change in the operating file has occurred.

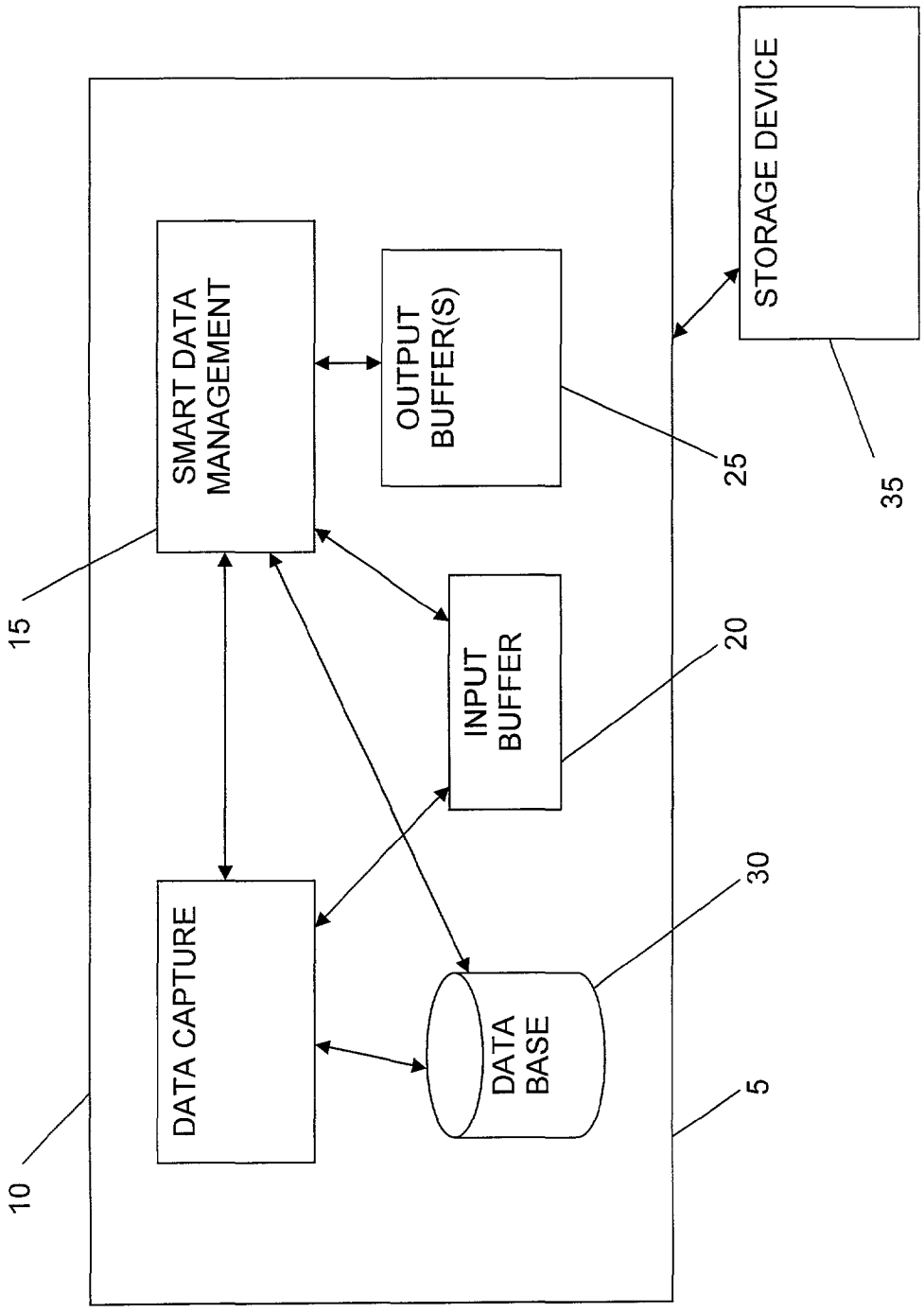

SMART DATA MANAGEMENT
OUTPUT BUFFER(S)
STORAGE DEVICE
INPUT BUFFER
DATA CAPTURE
DATA BASE
10
15
20
25
30
35
5

FIGURE 1

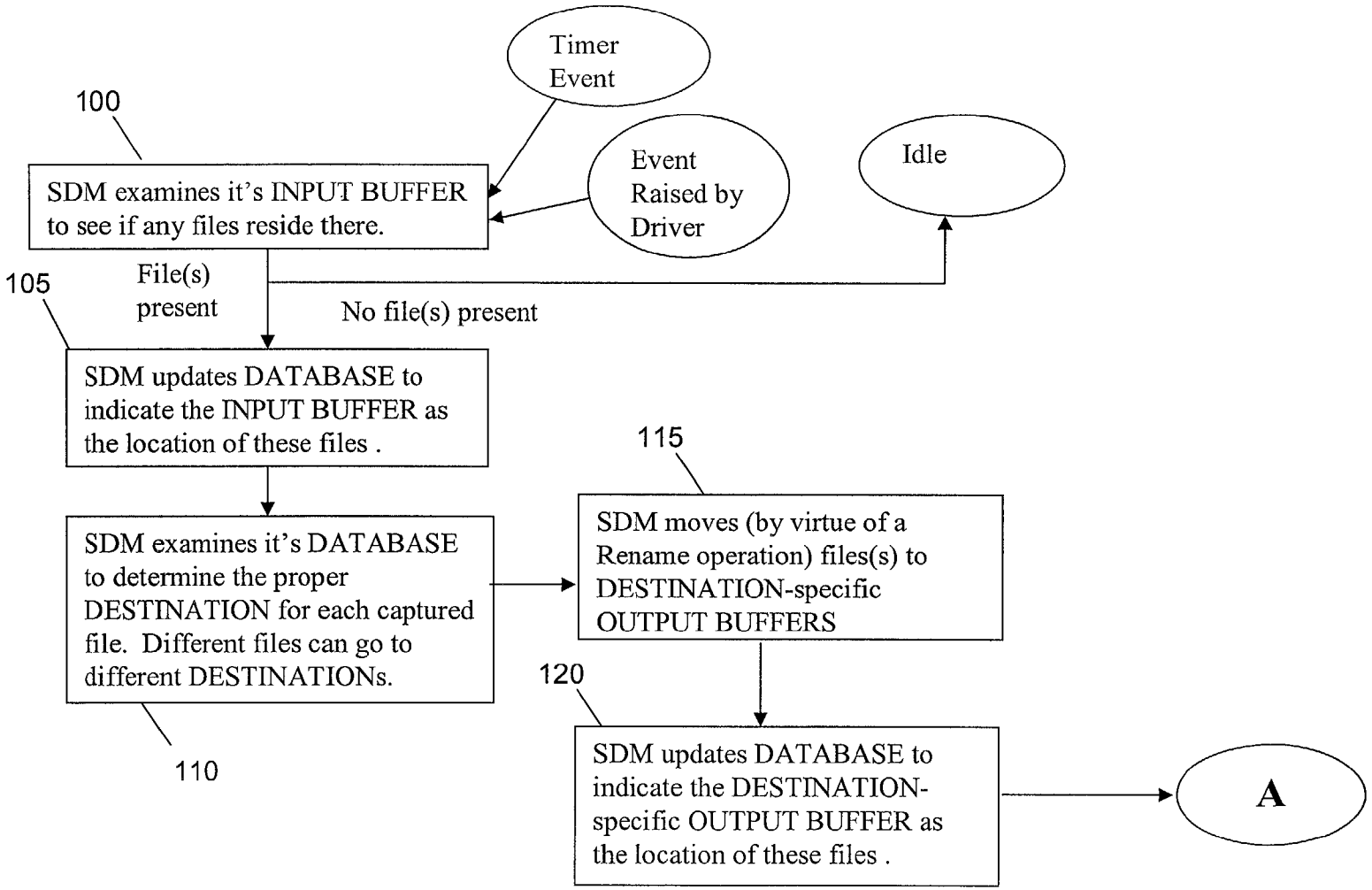

Timer Event
100
SDM examines it's INPUT BUFFER to see if any files reside there.
Event Raised by Driver
Idle
105
File(s) present
No file(s) present
SDM updates DATABASE to indicate the INPUT BUFFER as the location of these files .
115
SDM examines it's DATABASE to determine the proper DESTINATION for each captured file. Different files can go to different DESTINATIONs.
SDM moves (by virtue of a Rename operation) files(s) to DESTINATION-specific OUTPUT BUFFERS
120
110
SDM updates DATABASE to indicate the DESTINATION-specific OUTPUT BUFFER as the location of these files .
A

FIGURE 2A

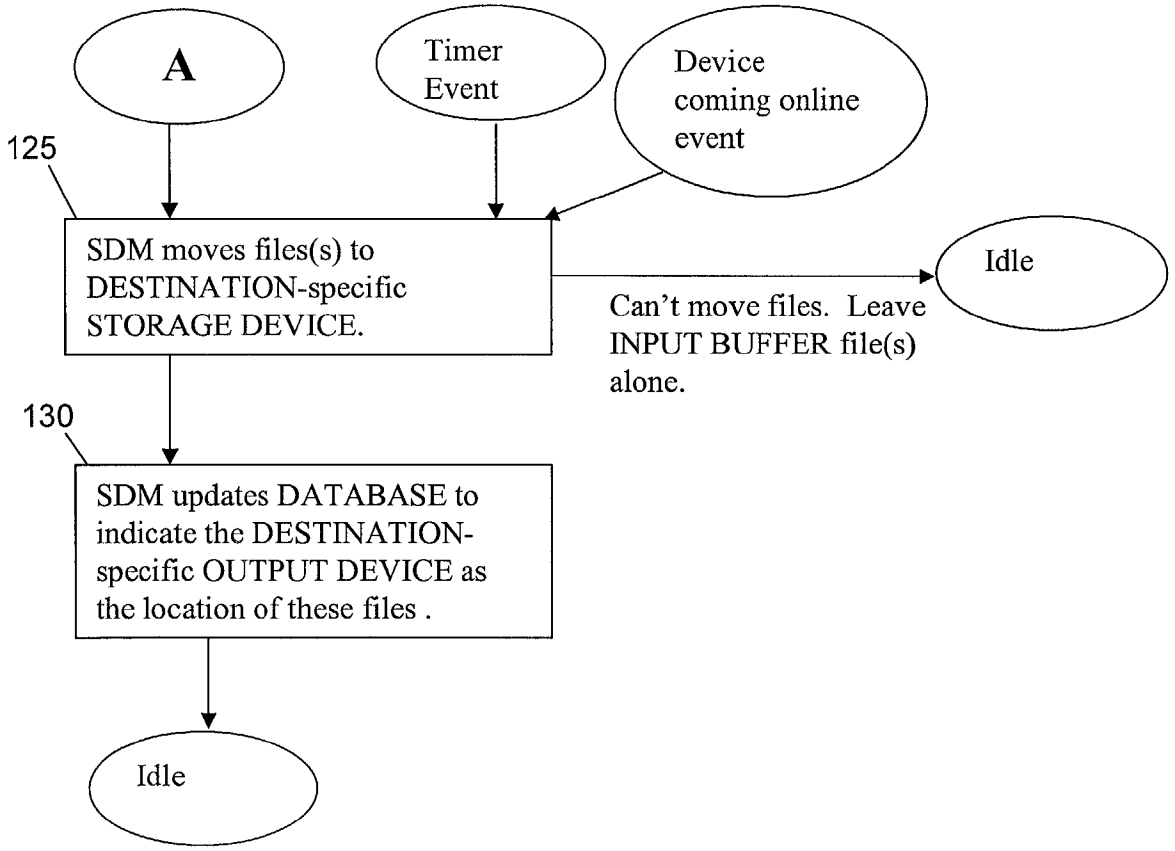

A
Timer Event
Device coming online event
125
SDM moves files(s) to DESTINATION-specific STORAGE DEVICE.
Idle
Can't move files. Leave INPUT BUFFER file(s) alone.
130
SDM updates DATABASE to indicate the DESTINATION-specific OUTPUT DEVICE as the location of these files .
Idle

FIGURE 2B

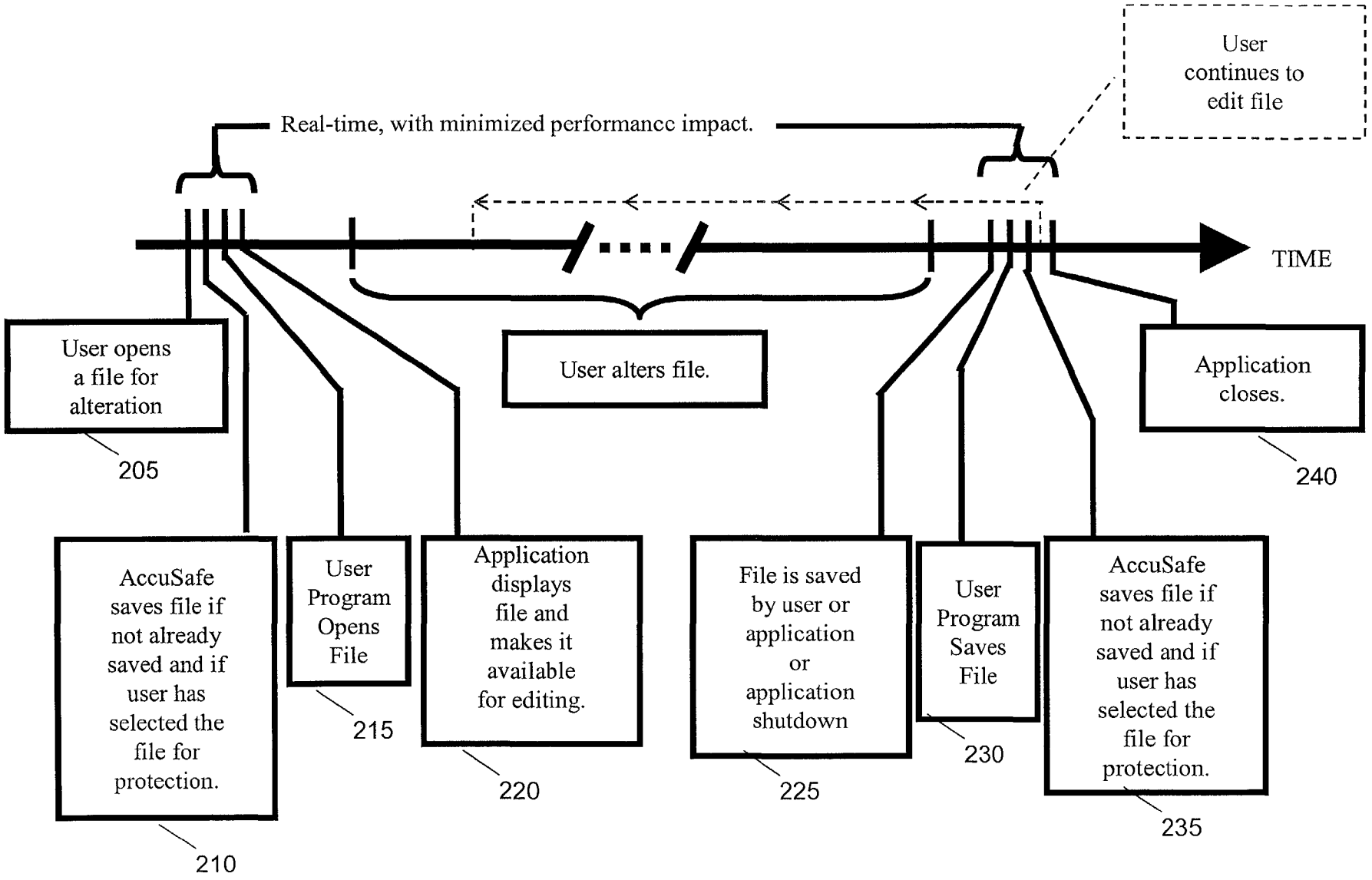

User continues to edit file
Real-time, with minimized performance impact.
TIME
User opens a file for alteration
205
User alters file.
Application closes.
240
AccuSafe saves file if not already saved and if user has selected the file for protection.
210
User Program Opens File
215
Application displays file and makes it available for editing.
220
File is saved by user or application or application shutdown
225
User Program Saves File
230
AccuSafe saves file if not already saved and if user has selected the file for protection.
235

FIGURE 3

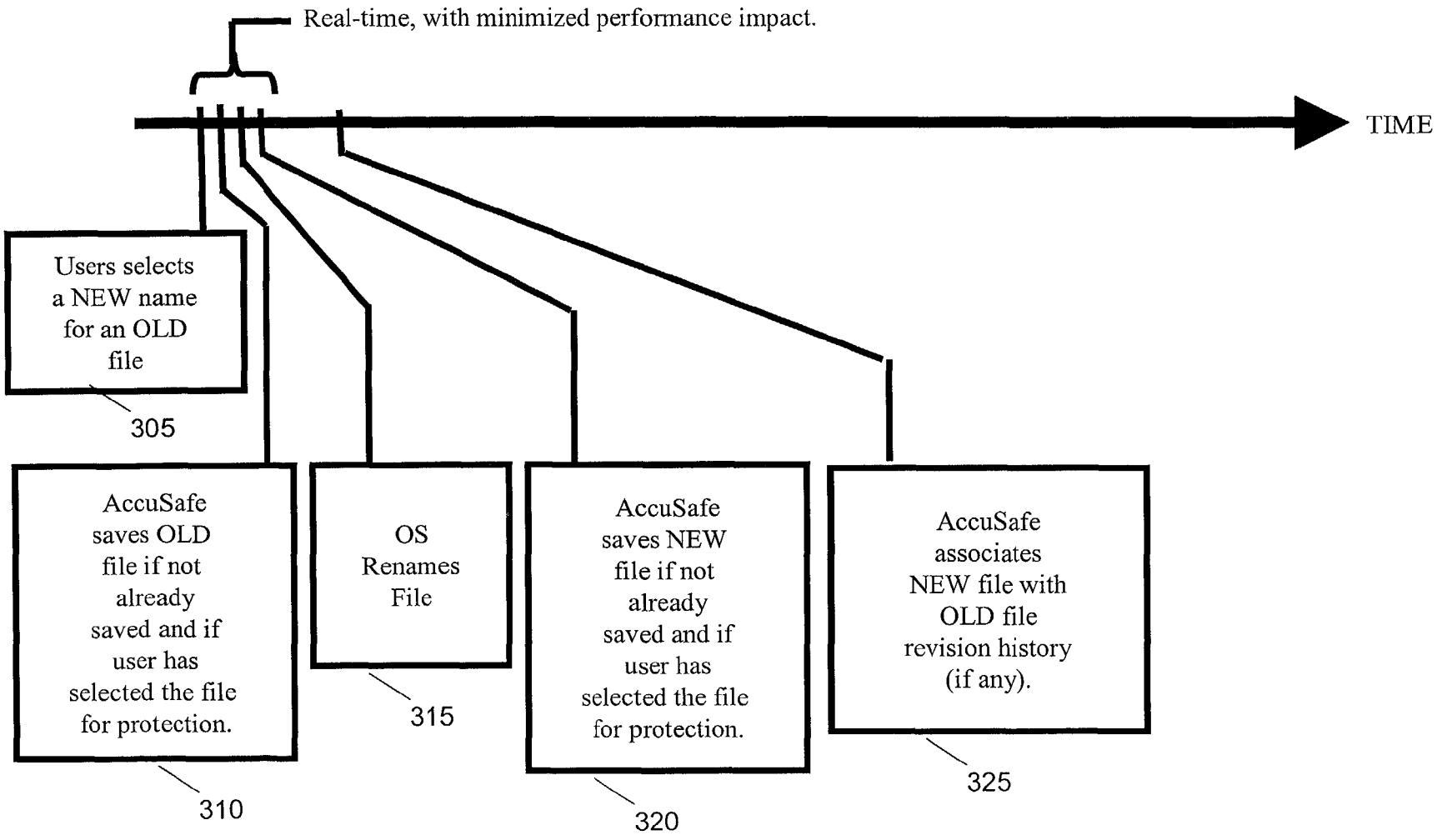

Real-time, with minimized performance impact.
TIME
Users selects a NEW name for an OLD file
305
AccuSafe saves OLD file if not already saved and if user has selected the file for protection.
310
OS Renames File
315
AccuSafe saves NEW file if not already saved and if user has selected the file for protection.
320
AccuSafe associates NEW file with OLD file revision history (if any).
325

FIGURE 4

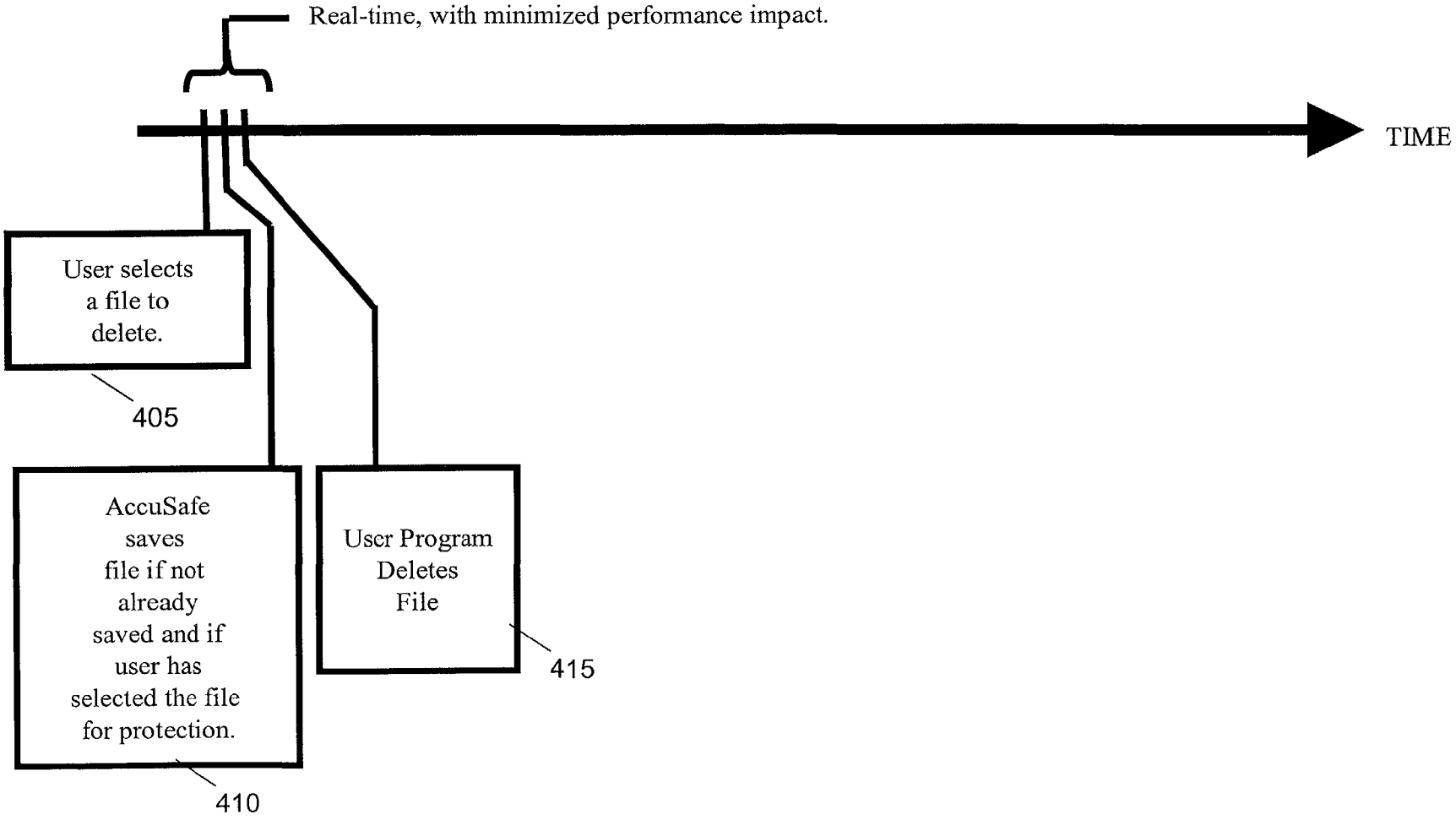

Real-time, with minimized performance impact.
TIME
User selects a file to delete.
405
AccuSafe saves file if not already saved and if user has selected the file for protection.
410
User Program Deletes File
415

FIGURE 5

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
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Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

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Postal Code	53562	Country i	US

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Correspondence Information:

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☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	104600		
Email Address	USPTOMAIL@aspireip.com	Add Email	Remove Email

Application Information:

Title of the Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS		
Attorney Docket Number	6982-2-CON	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	Suggested Figure for Publication (if any)	1

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

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Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	104600		

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This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	09/957459	2001-09-21
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
09/957459	non provisional of	60/234221	2000-09-21

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

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This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

Application Number	Country [i]	Filing Date (YYYY-MM-DD)	Access Code [i] (if applicable)

Remove

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Authorization to Permit Access:

☐ Authorization to Permit Access to the Instant Application by the Participating Offices

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In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

Applicant 1 Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

(●) Assignee	( ) Legal Representative under 35 U.S.C. 117	( ) Joint Inventor
( ) Person to whom the inventor is obligated to assign.	( ) Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor :

If the Applicant is an Organization check here. [X]

Organization Name	INTEGRITY PC INNOVATIONS, INC.		
Mailing Address Information:			
Address 1	1220 Lake Plaza Drive		
Address 2			
City	Colorado Springs	**State/Province**	CO
Country [i]	US	Postal Code	80906
Phone Number		Fax Number	
Email Address			

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6982-2-CON
	Application Number	
Title of Invention	AUTOMATIC REAL-TIME FILE MANAGEMENT METHOD AND APPARATUS	

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

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Phone Number		Fax Number	
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Signature	/Scott J. Hawranek/			Date (YYYY-MM-DD)	2013-06-24
First Name	Scott J.	Last Name	Hawranek	Registration Number	52411

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/925,768	Filing Date 06/24/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ 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	

APPLICATION AS AMENDED – PART II

AMENDMENT	06/24/2013	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $40 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** 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.

LDRC
/LAN DONG/

This collection of information is required by 37 CFR 1.16. 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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