816950

THE UNITED STATES OF AMERICA

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UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

October 06, 2021

THIS IS TO CERTIFY THAT ANNEXED IS A TRUE COPY FROM THE RECORDS OF THIS OFFICE OF THE FILE WRAPPER AND CONTENTS OF:

APPLICATION NUMBER: *13/543,866*
FILING DATE: *July 08, 2012*
PATENT NUMBER: *8726389*
ISSUE DATE: *May 13, 2014*

Certified by

Performing the Functions and Duties of the
Under Secretary of Commerce
for Intellectual Property
and Director of the United States
Patent and Trademark Office

WBRT002798

UTILITY PATENT APPLICATION TRANSMITTAL (Only for new nonprovisional applications under 37 CFR 1.53(b))	Attorney Docket No.	339000-000014
	First Inventor or Application Identifier	Melvyn Morris
	Title	METHODS AND APPARATUS FOR DEALING WITH MALWARE

APPLICATION ELEMENTS
See MPEP chapter 600 concerning utility patent application contents.

1. ☒ Fee Transmittal Form (e.g. PTO/SB/17) (Submit an original and a duplicate for fee processing)
   ☐ Applicant claims small entity status.
2. ☒ Specification — Total Pages 55
3. ☒ Drawing(s) (*35 U.S.C. 113*) — Total Sheets 3
4. ☒ Oath or Declaration — Total Pages 4
   a. ☐ Newly executed (original or copy)
   b. ☒ Copy from a prior application (*37 C.F.R. §1.63(d)*) (*for continuation/divisional with box 16 completed*)
5. ☒ Incorporation By Reference (*usable if box 4B is checked*) The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4B, is considered to be part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

ADDRESS TO: Commissioner for Patents
Box Patent Application
PO Box 1450
Alexandria, VA 22313-1450

ACCOMPANYING DOCUMENTS

6. ☐ Assignment Papers (cover sheet & documents(s))
7. ☐ 37 C.F.R. §3.73(b) Statement (*when there is an assignee*) ☐ Power of Attorney
8. ☐ English Translation Document (*if applicable*)
9. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
10. ☐ Preliminary Amendment
11. ☐ White Advance Serial No. Postcard
12. ☐ Certified Copy of Priority Document(s) (*if foreign priority is claimed*)
13. ☐ Request for Priority
14. ☒ Application Data Sheet
15. ☐ Other:

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below:
☒ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application no.: 11/477,807
Prior application information: Examiner: Cordelia P. K. Zecher Group Art Unit: 2432

17.
☒ This application is a ☒ Continuation ☐ Division ☐ Continuation-in-part (CIP)
of application Serial No. 11/477,807 Filed on 6/30/2006

☒ This application claims priority of UNITED STATES Patent Application Serial No. 11/477,807, Filed 6/30/2006

18. CORRESPONDENCE ADDRESS

47604

Name	Dale S. Lazar		Registration No.	28,872	
Signature		Date	July 6, 2012	Telephone	703.773.4000

EAST\41502275.1

WBRT002799

APPLICATION DATA SHEET

Application Information

Application Number::	
Filing Date::	
Application Type::	REGULAR
Subject Matter::	UTILITY
Suggested Classification::	
Suggested Group Art Unit::	
CD-ROM or CD-R::	NONE
Number of Disks::	
Number of copies of CDs::	
Sequence Submission::	
Computer Readable Form (CRF)::	NO
Number of Copies of CRF::	
Title::	METHODS AND APPARATUS FOR DEALING WITH MALWARE
Attorney Docket Number::	339000-000014
Request for Early Publication::	NO
Request for Non-Publication::	NO
Suggested Drawing Figure::	
Total Drawing Sheets::	3
Small Entity::	NO
Latin Name::	
Variety Denomination Name::	
Petition Included::	NO
Petition Type::	
Licensed US Govt. Agency::	
Contract of Grant Numbers::	
Secrecy Order in Parent Appln.::	NO

INITIAL
7/6/2012

WBRT002800

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APPLICANT INFORMATION

Applicant Authority Type::	INVENTOR
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INITIAL
7/6/2012

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INITIAL
7/6/2012

WBRT002802

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Open Text Inc. EX-2018 - 5

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State or Province of Residence::	GLOUCESTERSHIRE
Country of Residence::	UNITED KINGDOM
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City of mailing address::	HUCCLECOTE
State or Province of mailing address::	GLOUCESTERSHIRE
Country of mailing address::	UNITED KINGDOM
Postal or Zip Code of mailing address::	GL4 3JZ

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7/6/2012

WBRT002803

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REPRESENTATIVE INFORMATION

Representative Customer Number:: 47604

DOMESTIC PRIORITY INFORMATION

Application::	Continuity Type::	Parent Application::	Parent Filing Date::
This Application	Continuation of	11/477,807	6/30/06

FOREIGN PRIORITY INFORMATION

Country::	Application Number::	Filing Date::	Priority Claimed
GB	0513375.6	6/30/05	YES

ASSIGNEE INFORMATION

Assignee Name::	PREVX LTD.
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Country of mailing address::	UNITED KINGDOM
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7/6/2012

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PTO/SB/81 (01-06)
Approved for use through 12/31/2008. OMB 0651-0035
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.

POWER OF ATTORNEY and CORRESPONDENCE ADDRESS INDICATION FORM		
	Application Number	11/477,807
	Filing Date	June 30, 2006
	First Named Inventor	Melvyn MORRIS et al.
	Art Unit	Unknown
	Examiner Name	Unknown
	Attorney Docket Number	339000-P0003

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

I hereby appoint:

☒ Practitioners associated with the Customer Number: 47604

OR

☐ Practitioner(s) name below:

Name	Registration Number

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

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

☒ The address associated with the above-mentioned Customer Number: 47604

OR

☐ The address associated with Customer Number:

OR

☐ Firm or individual name			
Address			
City		State	Zip
Country			
Telephone		Email	

I am the:

☐ Applicant/Inventor.

☒ Assignee of record of the entire interest. See 37 CFR 3.71.

Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

SIGNATURE of Applicant or Assignee of Record

Signature		**Date**	26/3/17
Name	Paul Stubbs	**Telephone**	
Title and Company	Director, Revx Ltd		

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

☒ ***Total of 1 forms are submitted.**

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/SB/96 (12-05)
Approved for use ugh 07/31/2006. OMB 0651-0031
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STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Prevx Limited

Application No./Patent No./Control No.: 11/477,807 Filed/Issue Date: June 30, 2006

Entitled: METHODS AND APPARATUS FOR DEALING WITH MALWARE

Prevx Limited, (Name of Assignee) a Corporation (Type of Assignee, corporation, partnership, university, government agency, etc.)

States that it is:

1. ☒ the assignee of the entire right, title, and interest; or

2. ☐ an assignee of less than the entire right, title and interest
(The extent (by percentage) of its ownership interest is _____%

In the patent application/ patent identified above by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 018348, Frame 0840, or a true copy of the original assignment is attached.

OR

B. ☐ A chain of title from the inventor(s), of the present 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.

3. From: _____ To: _____
The document was recorded in the United States Patent and trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

As required by 37 CFR 3.73(b)(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 assignees.

Signature — 26/3/7 Date

Paul Stubbs
Printed or Typed Name — Telephone Number

Director
Title

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**

FOR UTILITY
ORIGINAL
DECLARATION

RULE 63 (37 C.F.R. 1.63)
DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the INVENTION ENTITLED Methods and Apparatus for Dealing with Malware, the specification of which was filed on 30th June 2006 as U.S. Application No. 11/477807.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. Except as noted below, I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International Application which designated at least one other country than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT International Application, filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

PRIOR FOREIGN APPLICATION(S)

Number	Country	Filed	Date First Laid Open Or Published	Date Patented or Granted	Priority Claimed
0513375.6	GB	30th June 2005			Yes

Except as noted below, I hereby claim domestic priority benefit under 35 U.S.C. 119(e) or 120 and/or 365(c) of the indicated United States applications listed below and PCT International applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT International filing date of this application.

PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S)

Application Number	Filed	Status (pending, abandoned, patented)	Priority Claimed

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.

And I hereby appoint Pillsbury Winthrop Shaw Pittman LLP, Intellectual Property Group, (to whom all communications are to be directed), and persons of that firm who are associated with USPTO Customer No. 00909 individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I hereby authorize them to delete from that Customer No. names of persons no longer with their firm, to add new persons of their Firm to that Customer No., and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct the above Firm and/or an attorney of that Firm in writing to the contrary.

Power of Attorney to Customer Number 00909

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	First	Middle Initial	Family Name	
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	City	State/Foreign Country	Country of Citizenship	
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INVENTOR'S SIGNATURE: Date:

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	First	Middle Initial	Family Name	
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	City	State/Foreign Country	Country of Citizenship	
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INVENTOR'S SIGNATURE: M. Hartwig Date:

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INVENTOR'S SIGNATURE: D Hart Date:

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Residence	Hucclecote	United Kingdom	GB
	City	State/Foreign Country	Country of Citizenship
Mailing Address	176 Barnwood Road, Hucclecote, Gloucester Gloucestershire GL4 3JZ, United Kingdom		

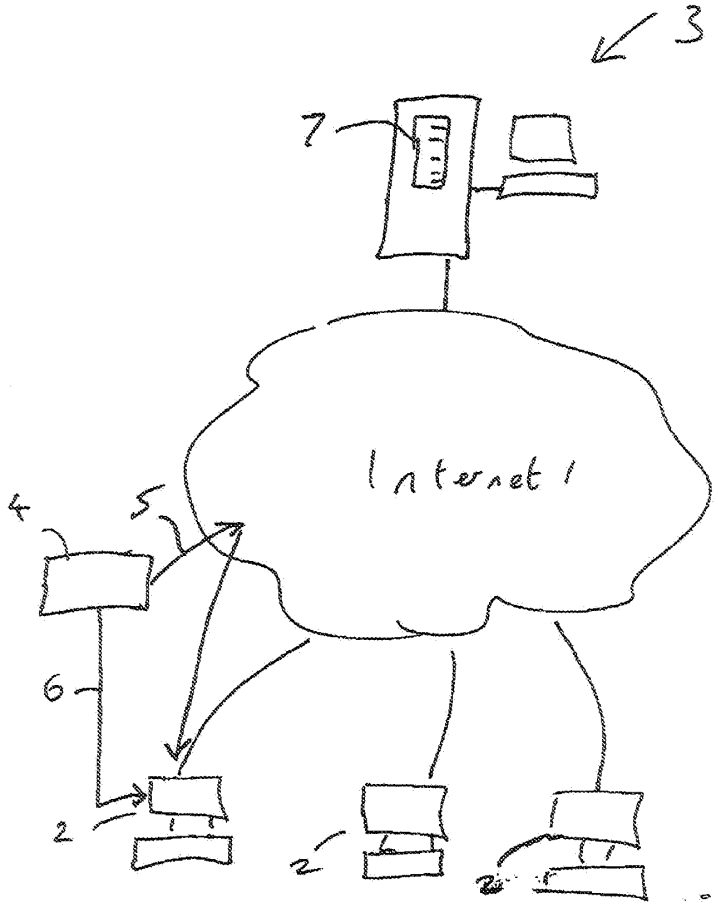


FIG. 1

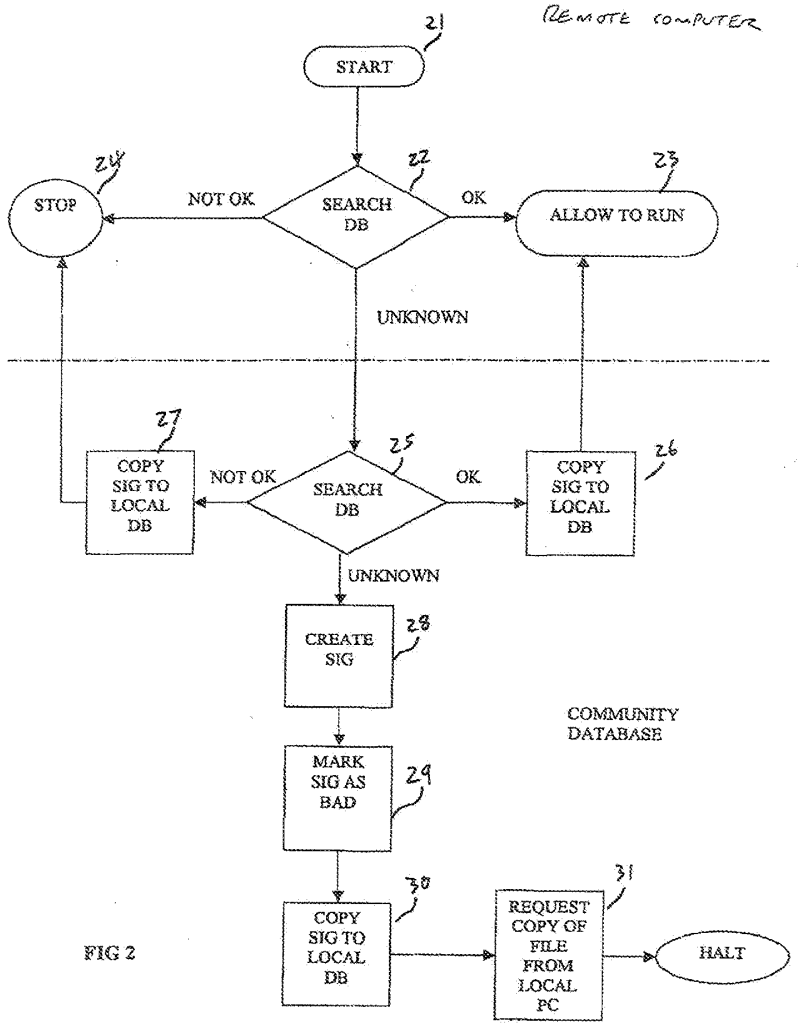

REMOTE COMPUTER
21
START
22
SEARCH DB
NOT OK
OK
24
STOP
23
ALLOW TO RUN
UNKNOWN
27
COPY SIG TO LOCAL DB
NOT OK
25
SEARCH DB
OK
26
COPY SIG TO LOCAL DB
UNKNOWN
CREATE SIG
28
COMMUNITY DATABASE
MARK SIG AS BAD
29
30
COPY SIG TO LOCAL DB
31
REQUEST COPY OF FILE FROM LOCAL PC
HALT

FIG 2

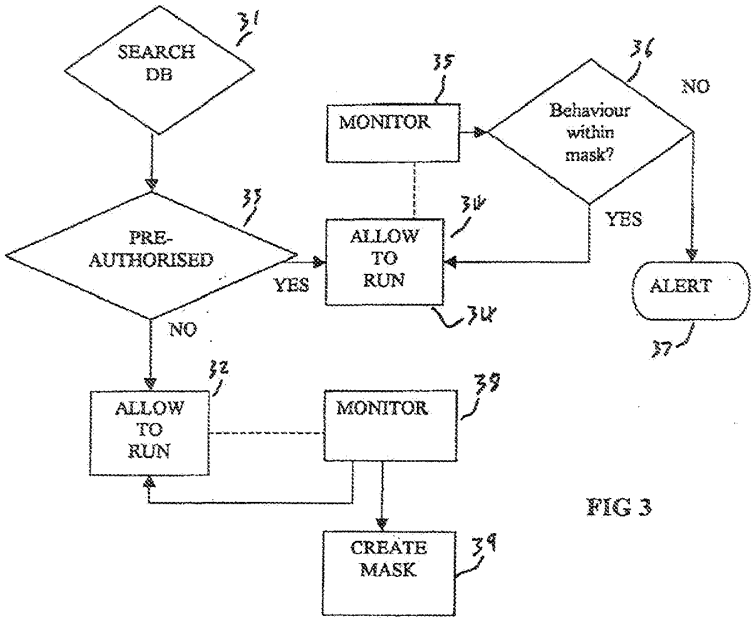

SEARCH DB
31
PRE-AUTHORISED
33
YES
NO
ALLOW TO RUN
32
MONITOR
35
Behaviour within mask?
36
NO
YES
ALLOW TO RUN
34
ALERT
37
MONITOR
39
CREATE MASK
39

FIG 3

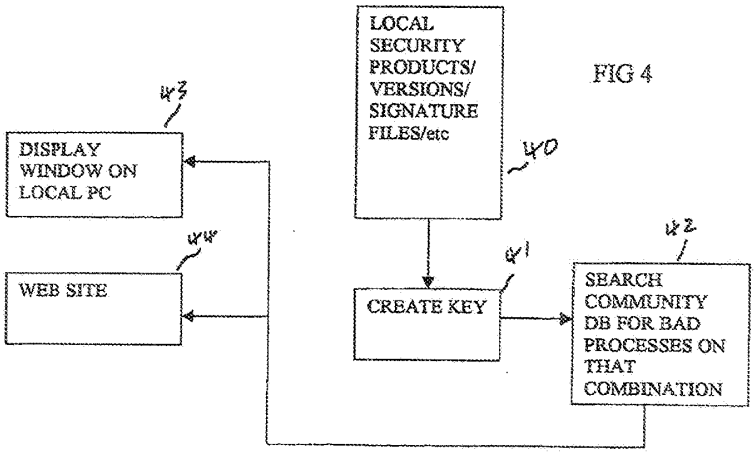

LOCAL SECURITY PRODUCTS/ VERSIONS/ SIGNATURE FILES/etc
40
DISPLAY WINDOW ON LOCAL PC
43
WEB SITE
44
CREATE KEY
41
SEARCH COMMUNITY DB FOR BAD PROCESSES ON THAT COMBINATION
42

FIG 4

Electronic Patent Application Fee Transmittal	
Application Number:	
Filing Date:	
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn M Morris
Filer:	Dale S. Lazar/Ava M. Dixon
Attorney Docket Number:	339000-000014
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility application filing	1011	1	380	380
Utility Search Fee	1111	1	620	620
Utility Examination Fee	1311	1	250	250
Pages:				
Claims:				
Claims in excess of 20	1202	9	60	540
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		1790

Electronic Acknowledgement Receipt	
EFS ID:	13197626
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn M Morris
Customer Number:	47604
Filer:	Dale S. Lazar/Ava M. Dixon
Filer Authorized By:	Dale S. Lazar
Attorney Docket Number:	339000-000014
Receipt Date:	08-JUL-2012
Filing Date:	
Time Stamp:	17:57:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1790
RAM confirmation Number	7301
Deposit Account	
Authorized User	

File Listing:

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

WBRT002814

1		ContinuationApplication.pdf	22532318 fab6ed76e21649afa5bba0686755bc454a0bb06a	yes	68

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Transmittal of New Application	1	1
Application Data Sheet	2	6
Oath or Declaration filed	7	10
Specification	11	57
Claims	58	64
Abstract	65	65
Drawings-only black and white line drawings	66	68

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	36670 c7af8d596457aa1bde33e67a0eeffa0a0b4ecc17	no	2

Warnings:

Information:

Total Files Size (in bytes):	22568988

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.

METHODS AND APPARATUS FOR DEALING WITH MALWARE

This application is a continuation of U.S. Application No. 11/477,807 filed June 30, 2006, which claims priority to United Kingdom Application No. 0513375.6, filed June 30, 2005. The entirety of all of the above-listed Applications are incorporated herein by reference.

The present invention relates generally to methods and apparatus for dealing with malware. In one aspect, the present invention relates to a method and apparatus for classifying a computer object as malware. In another aspect, the present invention relates to a method and apparatus for determining the protection that a remote computer has from malware. In another aspect, the present invention relates to a method and apparatus for classifying a computer object as malware or as safe. In another aspect, the present invention relates to a method of installing software on a computer.

The term "malware" is used herein to refer generally to any executable computer file or, more generally "object", that is or contains malicious code, and thus includes viruses, Trojans, worms, spyware, adware, etc. and the like.

A typical anti- malware product, such as anti-virus scanning software, scans objects or the results of an algorithm applied to the object or part thereof to look for signatures in the object that are known to be indicative of the presence of a virus. Generally, the method of dealing with malware is that when new types of malware are

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released, for example via the Internet, these are eventually detected. Once new items of malware have been detected, then the service providers in the field generate signatures that attempt to deal with these and these signatures are then released as updates to their anti-malware programs. Heuristic methods have also been employed.

These systems work well for protecting against known malicious objects. However, since they rely on signature files being generated and/or updated, there is inevitably a delay between a new piece of malware coming into existence or being released and the signatures for combating that malware being generated or updated and supplied to users. Thus, users are at risk from new malware for a certain period of time which might be up to a week or even more. Moreover, in order to try to defeat anti-virus products, the malware writers use obfuscation techniques in order to attempt to hide the signature or signature base data of the virus code from detection. Typically, the obfuscation involves encrypting or packing the viral code.

WO-A-2004/097602 describes a system that analyses computer files received or generated by a local computer and compares these with a database of known files to determine whether a particular file is known and if so whether it has been known about long enough that it can be regarded as "safe". However, in practice, on its own this is not likely to provide for adequate protection because, for example, the active payload of a virus or Trojan may only be programmed to activate at a particular date, or upon receiving a message or instruction from a local or

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remote system or process, or on the occurrence of a particular event that may be many months or even years after the process has been first run or is released. Thus, just looking at the age of a file is an unsatisfactory way of determining whether it is properly safe and will remain so.

In the system of US-A-2004/0083408, a worm in a file is detected by examining connection attempts made by the specific file running on a computer.

US-A-6944772, US-A-6772346, EP-A-1549012 and EP-A-1280040 all disclose "community-based" anti-malware systems in which a plurality of "local" computers all connect via a network (which may be a LAN or the Internet, for example) to a central computer. On encountering a file that is not already known to them, the local computers send a request to the central computer for authorisation to run the file. If the file is recognised at the central computer, then the central computer can send permission for the local computer to run the file if the file is known to be safe or send a "deny" command if the file is known to be malicious. However, in each of these prior art proposals, if the file is not known at the central computer, then the whole file is sent to the central computer where it can be analysed to determine whether it should be regarded as safe or malware. Such analysis is typically carried out manually or "semi-manually" by subjecting the file to detailed analysis, for example by emulation or interpretation, which can still take days given the human involvement that is typically required. There is therefore still a considerable period of time before a new file is

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classified as safe or as malware. In the case of these prior art systems, the request for authorisation to run the file that is sent by a local computer to the central computer may comprise sending a checksum or "signature" or "key" that uniquely represents the file.

A similar community-based anti-malware system is disclosed in WO-A-02/33525. In this system, in the case that a local computer is seeking clearance to run a file that is not known by the central computer to be safe or malware, some limited audit information about the prevalence of the file on other local computers can be sent to a human system administrator associated with the local computer that is seeking permission to run the file. The human system administrator can therefore make a better informed though still "manual" decision as to whether or not the file is safe to run.

In the system of US-A-2004/0073810, a metafile containing data about an attachment or other transmitted file is sent to a central computer. The data about that file is analysed to determine a likelihood of the transmitted file being malware. A specific example given is that if the transmitted file has been transmitted via at least a certain number of servers, then it should be treated as malware.

In the systems disclosed in US-A-2005/0021994 and US-A-2004/0153644, pre-approved files, which may be certified as safe by for example the software vendor associated with the files, may be permitted always to run without further checking. In one embodiment of the system

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of US-A-2004/0153644, monitoring is carried out to decide that a file is malicious if an abnormally high number of requests by that file is received at a central authority from plural local computers in a time period or if an abnormally high number of requests by that file on a single computer is received from the single local computer in a time period.

In the system of US-A-2004/0006704, a comparison is made between installed versions of software on a computer with a database of software versions and their known vulnerabilities. A user of the computer can therefore be informed of specific risks and how to minimise those risks by updating existing or installing new software.

In the system of WO-A-03/021402, a central database holds a virtual image of all files stored on each of plural local computers. If a threat in one local computer is identified, other local computers with a similar configuration can be notified of the risk.

Thus, the prior art systems either rely on deep analysis of a new object in order to determine whether or not the object is malicious, which introduces delay and therefore risk to users during the period that the file is analysed and new anti-malware signatures distributed, or limited analysis of the operation of the particular object or its method of transmission to a computer is carried out to decide a likelihood of the object being malicious.

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According to a first aspect of the present invention, there is provided a method of classifying a computer object as malware, the method comprising:

at a base computer, receiving data about a computer object from each of plural remote computers on which the object or similar objects are stored;

comparing in the base computer the data about the computer object received from the plural computers; and,

classifying the computer object as malware on the basis of said comparison.

Compared to the prior art that relies solely on signature matching, this aspect allows a comparison to be made between the objects and/or their effects on the different remote computers to determine whether or not a particular object should be classed as good or as malware. Sophisticated pattern analysis can be carried out. This allows a rapid determination of the nature of the object to be made, without requiring detailed analysis of the object itself as such to determine whether it malware and also avoids the need to generate new signatures to be used for signature matching as in the conventional prior art anti-virus software.

In a preferred embodiment, the data about the computer object that is sent from the plural remote computers to the base computer and that is used in the comparison includes one or more of: executable instructions contained within or constituted by the object; the size of the object; the current name of the object; the physical and folder location of the object on disk; the original name of the object; the creation and modification dates of the object;

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vendor, product and version and any other information stored within the object; the object header or header held by the remote computer; and, events initiated by or involving the object when the object is created, configured or runs on the respective remote computers.

Preferably, the comparing identifies relationships between the object and other objects. In an example, this can be used immediately and automatically to mark a child object as bad (or good) if the or a parent or other related object is bad (or good). Thus, if at least one other object to which said object is related is classed as malware, then the method may comprise classifying said object as malware. Said other objects include the object or similar objects stored on at least some of the remote computers. Said other objects may include other objects that are parent objects or child objects or otherwise process-related objects to said object.

In a most preferred embodiment, the data is sent in the form of key that is obtained by a hashing process carried out in respect of the objects on the respective remote computers. A major advantage of using such a key is that it keeps down the volume of data that needs to be transmitted to the base computer. Given that there may be thousands or even millions of connected remote computers and further given that each may send details about very many objects, this can be an important advantage.

The key preferably has at least one component that represents executable instructions contained within or constituted by the object. This important preferred

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feature allows a comparison to be made at the base computer of only the executable instructions of the object. This means for example that differently named objects that basically have the same executable instructions, which is often an indicator that the objects are malware, can nevertheless be regarded as the "same" object for this purpose. As another example, a new version of a program may be released which has minor changes compared to a previous version already known to the base computer and which in substance, at least in respect of the executable instructions, can be regarded as being the same as the previous version. In that case, the minor differences can be ignored and the objects regarded as being the same. Not only is this useful in distinguishing between malware and for example revised versions of previous software, it also keeps down the data transmission and storage requirements because the base computer can inform the remote computers that an apparently new object is for this purpose the same as a previously known object, thus avoiding having the remote computers send full details about the object or the object itself to the base computer.

The key preferably has at least one component that represents data about said object. Said data about said object may include at least one of: the current name of the object; the physical and folder location of the object on disk; the original name of the object; the creation and modification dates of the object; vendor, product and version and any other information stored within the object; the object header or header held by the remote computer; and, events initiated by or involving the object when the

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object is created, configured or runs on the respective remote computers.

The key preferably has at least one component that represents the physical size of the object.

Where more than one of these components are present in the key, the plural components are preferably severable.

The method may comprise initially classifying an object as not malware, generating a mask for said object that defines acceptable behaviour for the object, and comprising monitoring operation of the object on at least one of the remote computers and reclassifying the object as malware if the actual monitored behaviour extends beyond that permitted by the mask. This provides an efficient and effective way of monitoring the behaviour of an object that has been classified or regarded as good and allows the object to be reclassified quickly as malware if the behaviour of the object warrants it.

According to a second aspect of the present invention, there is provided apparatus for classifying a computer object as malware, the apparatus comprising:

a base computer constructed and arranged to receive data about a computer object from each of plural remote computers on which the object or similar objects are stored;

the base computer being constructed and arranged to compare the data about the computer object received from said plural computers; and,

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the base computer being constructed and arranged to classify the computer object as malware on the basis of said comparison.

According to a third aspect of the present invention, there is provided a method of providing data about a computer object from a remote computer to a base computer so that a comparison can be made at the base computer with similar data received from other remote computers, the method comprising:

providing from a remote computer to a base computer data about a computer object that is stored on the remote computer;

the data including one or more of: executable instructions contained within or constituted by the object; the size of the object; the current name of the object; the physical and folder location of the object on disk; the original name of the object; the creation and modification dates of the object; vendor, product and version and any other information stored within the object; the object header or header held by the remote computer; and, events initiated by or involving the object when the object is created, configured or runs on the respective remote computers;

the data being sent in the form of key that is obtained by a hashing process carried out in respect of the object on the remote computer.

This method, which may be carried out by so-called agent software running on the remote computer, allows for efficient sending of data to the base computer, which minimises data transmission and storage requirements and

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also permits rapid analysis to be made at the base computer.

The key preferably has at least one component that represents executable instructions contained within or constituted by the object.

The key preferably has at least one component that represents data about said object. Said data about said object may include at least one of: the current name of the object; the physical and folder location of the object on disk; the original name of the object; the creation and modification dates of the object; vendor, product and version and any other information stored within the object; the object header or header held by the remote computer; and, events initiated by or involving the object when the object is created, configured or runs on the respective remote computers.

The key preferably has at least one component that represents the physical size of the object.

According to a fourth aspect of the present invention, there is provided a method of determining the protection that a remote computer has from malware, the method comprising:

receiving at a base computer details of all or selected security products operating at a point in time on said remote computer;

receiving similar information from other remote computers connected to the base computer; and,

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identifying any malware processes that were not identified by said other remote computers having that particular combination of security products.

In this way, the base computer can be used to obtain information as to whether for example a particular, specific combination of operating system and various security products, including settings and signature files existing at a point in time, renders a particular computer having those products and settings susceptible or vulnerable to any particular malware object. The user can be advised accordingly and for example provided with recommendations for remedying the situation.

The method may therefore comprise providing information to the user of said remote computer that said remote computer may be susceptible to attack by said malware processes on the basis of said identifying.

The details of all or selected security products preferably includes the name of the security products, versions, and loaded signature files.

According to a fifth aspect of the present invention, there is provided apparatus for determining the protection that a remote computer has from malware, the apparatus comprising:

a base computer constructed and arranged to receive computer details of all or selected security products operating at a point in time on said remote computer;

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the base computer being constructed and arranged to receive similar information from other remote computers connected to the base computer; and,

the base computer being constructed and arranged to identify any malware processes that were not identified by said other remote computers having that particular combination of security products.

According to a sixth aspect of the present invention, there is provided a method of classifying a computer object as malware or as safe, wherein said computer object is a descendant or otherwise related object of a first computer object, the method comprising:

classifying a first computer object as malware or as safe;

identifying in a key relating to said first computer object a component that uniquely identifies the first computer object and that is inherited or otherwise present in the key of a descendant or other related computer object of the first computer object; and,

classifying said computer object as malware or as safe as the case may be on the basis of the unique identifier component being present in the key of said computer object.

This aspect uses the concept of ancestry to enable objects to be marked as malware. For example, any particular process may spawn child processes which are therefore related. The key relating to the first object may be inspected to identify a component that uniquely identifies the first object and that is inherited or otherwise present in the key of a descendant or other related object of the first object.

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The method may comprise monitoring activities of said first computer object and reclassifying the first computer object as malware in the case that it was initially classified as safe and subsequently determined to be malware, the method further comprising automatically classifying as malware any computer object that has a key in which said unique identifier component is present.

According to a seventh aspect of the present invention, there is provided apparatus for classifying a computer object as malware or as safe, wherein said computer object is a descendant or otherwise related object of a first computer object, the apparatus comprising:

a computer constructed and arranged to classify a first computer object as malware or as safe;

the computer being constructed and arranged to identify in a key relating to said first computer object a component that uniquely identifies the first computer object and that is inherited or otherwise present in the key of a descendant or other related computer object of the first computer object; and,

the computer being constructed and arranged to classify said computer object as malware or as safe as the case may be on the basis of the unique identifier component being present in the key of said computer object.

According to an eighth aspect of the present invention, there is provided a method of installing software on a computer, the method comprising:

on initiation of installation of software on a computer, providing a computer-generated prompt on the

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computer to a user to ascertain whether the user authorises the installation; and,

ceasing the installation if a user authorisation is not received, else:

receiving at the computer the user's authorisation to proceed with the installation;

proceeding with the installation;

obtaining data about computer objects that are created or used during the installation;

storing said data at the local computer.

This provides for security when a user is installing new software and is not for example connected to a base computer having a community database of the type mentioned above. In that case, the method, which may be implemented in agent software running on the local computer, allows the user to permit the installation to proceed whilst at the same time gathering data about the objects (such as processes, new files, etc.) that are created during the installation.

Preferably, the locally stored data is referred to during the installation to ensure that all objects created or used during the installation are part of the installation process, and, if it is found that objects created or used during the installation are not part of the installation process, either or both of: (i) ceasing the installation and (ii) providing a computer-generated prompt on the computer to the user accordingly. This allows the method to ensure that only those objects that are required for the installation are permitted to be created or used and thus avoids unwittingly allowing malware to install

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(given that malware often creates objects that are not expected as part of a normal installation of new software).

In a preferred embodiment, the method comprises connecting the computer to a community database that is connectable to a plurality of computers, and uploading the stored data to the community database for comparison with similar data provided by other computers.

The method may comprise downloading data about trusted installers to the computer, said data about trusted installers being referred to during the installation such that any objects relating to or created by the trusted installer are automatically authorised to proceed. This facilitates installation of software that is known a priori to be trustworthy.

Said data about trusted installers may be referred to only for a predetermined time period following receipt at the computer of the user's authorisation to proceed with the installation.

The present invention also includes computer programs comprising program instructions for causing a computer to perform any of the methods described above.

Although the embodiments of the invention described with reference to the drawings comprise computer processes performed in computer apparatus and computer apparatus itself, the invention also extends to computer programs, particularly computer programs on or in a carrier, adapted for putting the invention into practice. The program may

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be in the form of source code, object code, a code intermediate source and object code such as in partially compiled form, or in any other form suitable for use in the implementation of the processes according to the invention. The carrier be any entity or device capable of carrying the program. For example, the carrier may comprise a storage medium, such as a ROM, for example a CD ROM or a semiconductor ROM, or a magnetic recording medium, for example a floppy disk or hard disk. Further, the carrier may be a transmissible carrier such as an electrical or optical signal which may be conveyed via electrical or optical cable or by radio or other means.

Embodiments of the present invention will now be described by way of example with reference to the accompanying drawings, in which:

Figure 1 shows schematically apparatus in which an embodiment of the present invention may be implemented;

Figure 2 is a flowchart showing schematically the operation of an example of a method according to an embodiment of the present invention;

Figure 3 is a flowchart showing schematically the operation of another example of a method according to an embodiment of the present invention; and,

Figure 4 is a flowchart showing schematically an information obtaining stage.

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Referring to Figure 1, a computer network is generally shown as being based around a distributed network such as the Internet 1. The present invention may however be implemented across or use other types of network, such as a LAN. Plural local or "remote" computers 2 are connected via the Internet 1 to a "central" or "base" computer 3. The computers 2 may each be variously a personal computer, a server of any type, a PDA, mobile phone, an interactive television, or any other device capable of loading and operating computer objects. An object in this sense may be a computer file, part of a file or a sub-program, macro, web page or any other piece of code to be operated by or on the computer, or any other event whether executed, emulated, simulated or interpreted. An object 4 is shown schematically in the figure and may for example be downloaded to a remote computer 2 via the Internet 1 as shown by lines 5 or applied directly as shown by line 6.

In one preferred embodiment, the base computer 3 holds a database 7 with which the remote computers 2 can interact when the remote computers 2 run an object 4 to determine whether the object 4 is safe or unsafe. The community database 7 is populated, over time, with information relating to each object run on all of the connected remote computers 2. As will be discussed further below, data representative of each object 4 preferably takes the form of a so-called signature or key relating to the object and its effects. As will also be discussed further below, the database 7 may further include a mask for the object 4 that sets out the parameters of the object's performance and operation.

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Referring now to Figure 2, at the start point 21, a computer object 4 such as a process is run at a remote computer 2. At step 22, by operation of local "agent" software running on the remote computer 2, the operation of the process is hooked so that the agent software can search a local database stored at the remote computer 2 to search for a signature or key representing that particular process, its related objects and/or the event. If the local signature is present, it will indicate either that the process is considered to be safe or will indicate that that process is considered unsafe. An unsafe process might be one that has been found to be malware or to have unforeseen or known unsafe or malevolent results arising from its running. If the signature indicates that the process is safe, then that process or event is allowed by the local agent software on the remote computer 2 to run at step 23. If the signature indicates that the process is not safe, then the process or event is stopped at step 24.

It will be understood that there may be more than two states than "safe" or "not-safe" and choices may be given to the user. For example, if an object is considered locally to be not safe, the user may be presented with an option to allow the related process to run nevertheless. It is also possible for different states to be presented to each remote computer 2. The state can be varied by the central system to take account of the location, status or ownership of the remote computer or timeframe.

If the object is unknown locally, then details of the object are passed over the Internet 1 or other network to the base computer 3 for storing in the community database 7

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and preferably for further analysis at the base computer 3. In that case, the community database 7 is then searched at step 25 for a signature for that object that has already been stored in the community database 7. The community database 7 is supplied with signatures representative of objects, such as programs or processes, run by each monitored remote computer 2. In a typical implementation in the field, there may be several thousands or even millions of remote computers 2 connected or connectable to the base computer 3 and so any objects that are newly released upon the Internet 1 or that otherwise are found on any of these remote computers 2 will soon be found and signatures created and sent to the base computer 3 by the respective remote computers 2.

When the community database 7 is searched for the signature of the object that was not previously known at the remote computer 2 concerned, then if the signature is found and indicates that that object is safe, then a copy of the signature or at least a message that the object is safe is sent to the local database of the remote computer 2 concerned at step 26 to populate the local database. In this way, the remote computer 2 has this information immediately to hand the next time the object 4 is encountered. A separate message is also passed back to the remote computer 2 to allow the object to run in the current instance.

If the signature is found in the community database 7 and this indicates for some reason that the object is unsafe, then again the signature is copied back to the local database and marked "unsafe" at step 27, and/or a

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message is sent to the remote computer 2 so that running of the object is stopped (or it is not allowed to run) and/or the user given an informed choice whether to run it or not.

If after the entire community database 7 has been searched the object is still unknown, then it is assumed that this is an entirely new object which has never been seen before in the field. A signature is therefore created representative of the object at step 28, or a signature sent by the remote computer 2 is used for this purpose, and this signature is initially marked as bad or unsafe community database 7 at step 29. The signature is copied to the local database of the remote computer 2 that first ran the object at step 30. A message may then be passed to the remote computer 2 to instruct the remote computer 2 not to run the object or alternatively the user may be given informed consent as to whether to allow the object to run or not. In addition, a copy of the object itself may be requested at step 31 by the community database 7 from the remote computer 2.

If the user at the remote computer 2 chooses to run a process that is considered unsafe because it is too new, then that process may be monitored by the remote computer 2 and/or community database 7 and, if no ill effect occurs or is exhibited after a period of time of n days for example, it may then be considered to be safe. Alternatively, the community database 7 may keep a log of each instance of the process which is found by the many remote computers 2 forming part of the network and after a particular number of instances have been recorded, possibly with another particular number of instances or the process being allowed

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to run and running safely, the signature in the community database 7 may then be marked as safe rather than unsafe. Many other variations of monitoring safety may be done within this concept.

The details of an object 4 that are passed to the base computer 3 are preferably in the form of a signature or "key" that uniquely identifies the object 4. This is mainly to keep down the data storage and transmission requirements. This key may be formed by a hashing function operating on the object at the remote computer 2.

The key in the preferred embodiment is specially arranged to have at least three severable components, a first of said components representing executable instructions contained within or constituted by the object, a second of said components representing data about said object, and a third of said components representing the physical size of the object. The data about the object in the second component may be any or all of the other forms of identity such as the file's name, its physical and folder location on disk, its original file name, its creation and modification dates, vendor, product and version and any other information stored within the object, its file header or header held by the remote computer 2 about it; and, events initiated by or involving the object when the object is created, configured or runs on the respective remote computers. In general, the information provided in the key may include at least one of these elements or any two or more of these elements in any combination.

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In one preferred embodiment, a check sum is created for all executable files, such as (but not limited to) .exe and .dll files, which are of the type PE (Portable Executable file as defined by Microsoft). Three types of checksums are generated depending on the nature of the file:

Type 1: five different sections of the file are check summed. These include the import table, a section at the beginning and a section at the end of the code section, and a section at the beginning and a section at the end of the entire file. This type applies to the vast majority of files that are analysed;

Type 2: for old DOS or 16 bit executable files, the entire file is check summed;

Type 3: for files over a certain predefined size, the file is sampled into chunks which are then check summed. For files less than a certain predefined size, the whole file is check summed.

For the check summing process, in principle any technique is possible. The MD5 (Message-Digest algorithm 5) is a widely-used cryptographic hash function that may be used for this purpose.

This allows a core checksum to be generated by viewing only the executable elements of the checksum and making a comparison between two executables that share common executable code.

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For the type 1 checksum mentioned above, three signature processes may be used. The first defines the entire file and will change with almost any change to the file's content. The second attempts to define only the processing instructions of the process which changes much less. The third utilises the file's size, which massively reduces the potential of collisions for objects of differing sizes. By tracking the occurrences of all signatures individually appearing with different counterparts, it is possible to identify processes that have been changed or have been created from a common point but that have been edited to perform new, possibly malevolent functionality.

This "meta data" enables current and newly devised heuristics to be run on the data in the community database 7.

The data stored in the community database 7 provides an extensive corollary of an object's creation, configuration, execution, behaviour, identities and relationships to other objects that either act upon it or are acted upon by it.

The preferred central heuristics use five distinct processes to establish if an object is safe, unsafe or suspicious.

The first of the said processes utilises the singularity or plurality of names, locations, vendor, product and version information captured and correlated from all of the remote computers 2 that have seen the

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object. By considering the plurality of this information for a single object, a score can be determined which can be used as a measure of the authenticity and/or credibility of the object. Most safe objects tend not to use a large plurality of identifying information or locations. Rules can be established to consider this information in respect of the type of object and its location. For example, temporary files often utilise a plurality of system generated file names which may differ on each remote computer for the same object. Where an object has little plurality, then it provides a reference point to consider its behaviour in comparison to the known behaviours of other objects that have previously used that identifying information. For example, a new object that purports to be a version of notepad.exe can have its behaviour compared with the behaviour of one or more other objects that are also known as notepad.exe. This comparison may be against a single other object or multiple other objects that use the same or even similar identifying information. In this way, new patterns of behaviour can be identified for the new object. Also it allows the preferred embodiment to police an object's behaviour over time to identify new behavioural patterns that may cause an object that was previously considered safe to have its status reconsidered. Alternatively, the score based on identities may be considered along with scores for other objects or scores created by other processes on this object to be considered in combinations.

The second of the said processes utilises an object's relationship to other objects that act upon it or upon which it acts. For example, analysis can be made of which

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object created this object, which objects this object created, which objects created a registry key to run or configure this object, which objects were configured by or had registry keys created by this object, etc. In this regard an object is considered to have a relationship based on the event performed by it upon another object, or upon it by another object. This simple 1-to-1 relationship chain provides a complex series of correlation points, allowing ancestral relationships to be considered for any object and its predecessors by event or its issue (i.e. child and sub-child processes) by event. This allows a score to be developed that describes its relationships and associations with known, unknown, known safe or known bad objects or a combination thereof. Objects that have specific relationships, volumes of relationships or mixes of relationships to one type or another may be judged safe or unsafe accordingly. Alternatively, the relationship-based score may be considered along with other scores to arrive at a determination of safe or unsafe. This data can also be used to deduce a number of factors about objects related directly or via other objects and their behaviours. For example it is possible to deduce how one object's behaviour can be influenced or changed by its association or linkage to another. Consider for example notepad.exe as supplied by Microsoft with the Windows series of operating systems. It has a limited range of functionality and would not be expected therefore to perform a wide variety of events, such as transmitting data to another computer or running other programs etc. However, the behaviour of notepad.exe could be modified by injecting new code into it, such as via dynamic link library injection (DLL injection). In this case notepad.exe would now have new

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capabilities derived by the code injection or linkage to another object. Using the data that defines the relationships between objects it is possible to deduce that the new behaviours of a program can be attributed to the association with another object. If that new behaviour is malevolent, then it is possible to mark either or all processes as unsafe as appropriate.

The combination of behaviours captured provide a basis to determine if the object is safe or unsafe. Malware typically exhibit certain behaviour and characteristics. For example, malware frequently has a need to self-persist. This manifests itself in the need to automatically restart on system restarts or upon certain events. Creating objects in specific locations to auto restart or trigger execution is a typical characteristic of malware. Replacing core objects of the Windows system environment are another example of typical characteristics of malware. By providing a pattern of behaviour, the determination of objects to be unsafe or safe can be automated. The centralisation of the community data in the community database 7 provides the ability to rapidly assimilate object behaviours, allowing for the rapid identification and determination of malware. Objects may also perform events upon themselves which can be considered in deriving a score.

The third said process involves time and volumes. Relevant data includes when the object was first seen, when it was last seen, how many times it has been seen, how many times it has been seen in a given interval of time, and the increase or decrease of acceleration in it being seen.

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This information is highly relevant in determining the prevalence of an object in the community of remote computers. A score is developed based on these metrics which can be used to determine if an object is safe, unsafe or too prevalent to allow it to execute or propagate without very thorough examination. In this case, the object can be temporarily held or blocked from executing pending further information about its behaviour or relationships. This score may also be used in combination with scores from other processes. Time is also highly relevant in combination with other information, including but not limited to behaviours and identities. For example in the case of polymorphic or randomly named objects, time is a powerful qualifier. (A polymorphic virus changes its encryption algorithm and the corresponding encryption keys each time it replicates from one computer to another and so can be difficult to detect by conventional measures.) A program that creates other programs can often be considered normal or abnormal based on its activity over time.

The fourth said process considers the behaviour of an object. This allows a score to be developed based on the types of events performed by an object or events performed on it by itself or other objects. The centralised system of the community database 7 allows for an unlimited number of event types and can consider the object performing the event or the object having the event performed upon it, or both. Some event types also relate to external information other than objects, for example a program performing an event to connect with an Internet Chat Relay site, or a program modifying a non-executable file such as the Windows hosts file. The behavioural events of an object, be they

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as "actor" (i.e. the object doing something to another object) or as "victim" (i.e. the object has something done to it by another object) of any event can be considered in many ways, such as in combination, in sequence, in volume, in presence or absence, or in any combination thereof. The behavioural events in the preferred embodiment may have been provided by a remote computer 2 or from other external sources. The process can consider these in isolation or in combination. Furthermore it is a feature of the preferred embodiment that the behavioural events can be considered in combination with the status of other objects upon which the object acts or that act upon the object. For example, creating a program may have a different score if the program being created is safe, unsafe, new, unknown or suspicious. Similarly, a program that is created by a known bad program will likely have a different score attributed to its creation event depending on the status of the object creating it.

The fifth process considers the behaviour of a web page or script. In this respect, the web page and url combination is assigned a unique identity which allows its behaviour to be tracked as if it were an object like any other executable file. In this example, the web page may perform events that would normally be seen as events performed by the web browser (e.g. IExplore.exe or Firefox.exe). The preferred embodiment substitutes the identifying details and signatures of the web browser for the "pseudo" object identity associated with the web page being displayed or executing within the browser. In this respect, the status of the web page and/or web site to which it relates may be determined as safe, unsafe, unknown

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or suspicious in the same way as any other object. The web page's "pseudo" object identity also allows the preferred embodiment to block, interject or limit the functionality of that web page or web site to prevent some or all of its potentially unsafe behaviour or to provide the remote user with qualifying information to guide them about the safety of the web site, web page or their content.

Amongst other types, the types of meta data captured might be:

"Events": these define the actions or behaviours of an object acting upon another object or some other entity. The event has three principal components: the key of the object performing the act (the "Actor"), the act being performed (the "Event Type"), and the key of the object or identity of an other entity upon which the act is being performed (the "Victim"). While simple, this structure allows a limitless series of behaviours and relationships to be defined. Examples of the three components of an event might be:

Actor	Event Type	Victim
Object 1	Creates Program	Object 2
Object 1	Sends data	IP Address 3
Object 1	Deletes Program	Object 4
Object 1	Executes	Object 2
Object 2	Creates registry key	Object4

"Identities": these define the attributes of an object. They include items such as the file's name, its physical location on the disk or in memory, its logical

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location on the disk within the file system (its path), the file's header details which include when the file was created, when it was last accessed, when it was last modified, the information stored as the vendor, the product it is part of and the version number of the file and it contents, its original file name, and its file size.

"Genesisactor" - the key of an object that is not the direct Actor of an event but which is the ultimate parent of the event being performed. For example in the case of a software installation, this would be the key of the object that the user or system first executed and that initiated the software installation process, e.g. Setup.exe.

"Ancillary data": many events may require ancillary data, for example an event such as that used to record the creation of a registry run key. In this situation the "event" would identify the Actor object creating the registry run key, the event type itself (e.g. "regrunkey"), and the Victim or subject of the registry run key. The ancillary data in this case would define the run key entry itself; the Hive, Key name and Value.

"Event Checksums": because the event data can be quite large extending to several hundred bytes of information for a single event, its identities for the Actor and Victim and any ancillary data, the system allows for this data itself to be summarised by the Event Checksums. Two event checksums are used utilising a variety of algorithms, such as CRC and Adler. The checksums are of the core data for an event. This allows the remote computer 2 to send the checksums of the data to

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the central computer 3 which may already have the data relating to those checksums stored. In this case, it does not require further information from the remote computer 2. Only if the central computer 3 has never received the checksums will it request the associated data from the remote computer 2. This affords a considerable improvement in performance for both the remote and central computers 2,3 allowing much more effective scaling.

Thus, the meta data derived from the remote computers 2 can be used at the community database 7 to define the behaviour of a process across the community. As mentioned, the data may include at least one of the elements mentioned above (file size, location, etc.) or two or three or four or five or six or all seven (or more elements not specifically mentioned here). This may be used accordingly to model, test and create new automated rules for use in the community database 7 and as rules that may be added to those held and used in the local database of the remote computers 2 to identify and determine the response of the remote computers 2 to new or unknown processes and process activity.

Moreover, it is possible to monitor a process along with any optional sub-processes as an homogenous entity and then compare the activities of the top level process throughout the community and deduce that certain, potentially malevolent practices only occur when one or more specific sub-processes are also loaded. This allows effective monitoring (without unnecessary blocking) of programs, such as Internet Explorer or other browsers, whose functionality may be easily altered by downloadable

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optional code that users acquire from the Internet, which is of course the principal source of malevolent code today.

The potentially high volume of active users gives a high probability of at least one of them being infected by new malware. The speed of propagation can be detected and recorded so that the propagation of malware can be detected and malware designated as bad on the basis of the speed of propagation, optionally in combination with the other factors discussed above, such as file size, location and name. The simple volume of infection can also be used as a trigger. In a further embodiment, difference of naming of an otherwise identical piece of code combined with acceleration of first attempts to execute the code within the community allows pattern matching that will show up an otherwise identically signatured piece of code as bad.

This feature allows the statement in some embodiments that "nothing will propagate in our community faster than X without being locked down", so that if any process or event propagates more quickly over a given duration, it is marked as bad. This is for reasons of safety given that if for example an object is propagating quickly enough, then it might infect computers before it can be analysed to determine whether or not it is malware.

This process can be automated by the identification of the vector of propagation in the community (i.e. the source of type of propagation), from timestamp data held in the community database and the marking of a piece of code that has these attributes as bad. By comparison, it is believed that all other anti-malware providers rely on a simplistic

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known bad model and therefore are reliant primarily on malware infection actually occurring on terminals and being reported.

Thus, the community database 7 can be used to make early diagnosis, or simply to take precautionary measures, and thus stop potentially fast propagating worms and other malware very, very early in their life cycle. Given that it is possible to create a worm that can infect every computer connected to the Internet within a matter of a few minutes, this feature is highly desirable.

Even faster determination may be made by combining data defining the speed of propagation of a new piece of software with metadata collected by the agent software from the remote computers 2 and fed to the community database 7. This includes monitoring processes that attempt to conceal themselves from the user by randomly changing name and/or location on the remote computers 2. It also includes a process's attempt to create an identical copy (i.e. with identical code contents) on the computer but with a different name. This is a classic attribute of a worm.

The signature of an object may comprise or be associated with a mask which can be built up with use of that object and which indicates the particular types of behaviour to be expected from the object. If an object is allowed to run on a remote computer 2, even if the initial signature search 22 indicates that the object is safe, then operation of that object may be monitored within the parameters of the mask. The mask might indicate for example, the expected behaviour of the object; any external

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requests or Internet connections that that object might legitimately have to make or call upon the remote computer 2 to make, including details of any ports or interfaces that might be required to be opened to allow such communication; any databases, either local or over a local area network or wide area network or Internet, that may be expected to be interrogated by that object; and so on. Thus, the mask can give an overall picture of the expected "normal" behaviour of that object.

In practice, therefore, in one embodiment the behaviour of the object is continually monitored at the remote computer(s) 2 and information relating to that object continually sent to and from the community database 7 to determine whether the object is running within its expected mask. Any behaviour that extends beyond the mask is identified and can be used to continually assess whether the object continues to be safe or not. Thus, if for example the object, on a regular basis (say monthly or yearly) opens a new port to update itself or to obtain regular data, then this information is flagged. If it is found that the object has done this on other remote computers and has had no ill effects, or this behaviour is known from other objects and known to be safe, then this behaviour might be considered as safe behaviour and the mask is then modified to allow for this. If it has been found previously that this new behaviour in fact causes unsafe or malevolent results, then the object can then be marked as unsafe even if previously it was considered safe. Similarly, if the object attempts to connect to a known unsafe website, database or to take action that is known as

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generally being action only taken by unsafe programs, then again the object may be considered to be unsafe.

This is shown schematically in Figure 3. Figure 3 also shows the concept that any object can be pre-authorised by, for example a trusted partner, such as a major software company, a verification authority, a Government department, and so on. Pre-authorisation enables a supplier of a new object, which has not been released before, to get pre-authorisation for that object, and optionally includes the provision by that supplier of a mask detailing the expected and allowable behaviour of that object.

Referring to Figure 3 for example, when a process is run, the local and/or community databases are searched as before at step 31. If the process is not a pre-authorised one, then the steps of Figure 2 may be taken and the process might be allowed to run or not at step 32. If the process is pre-authorised, as determined at step 33, then it is immediately allowed to run, step 34. This may terminate the operation of the method. However, in a preferred variation, the process is then monitored whilst running, and is monitored each time it is run in the future in a monitoring state step 35 to determine whether its behaviour falls within its pre-authorised mask 36. If the behaviour falls within the pre-authorised behaviour, then the process is allowed to continue to run. If the behaviour extends beyond the allowed mask, such as by trying to instigate further processes or connections that have not been pre-authorised, then this behaviour is flagged at an alert step 37. Various actions could be

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taken at this stage. The process might simply not be allowed to run. Alternatively, the trusted authority that initially enabled pre-authorisation might be contacted, who may be able to confirm that this behaviour is acceptable or not. If it is acceptable, then the mask could be modified accordingly. If not acceptable, then the process might be marked as unsafe. Many other actions may be taken upon the noting of such an alert state.

If the process has been found not to be pre-authorised at step 33 but is nevertheless allowed to run, then the process is monitored at step 38 in order to generate a mask 39 representative of the normal behaviour of that process. Data representative of this mask might be sent to the community database 7 for scanning when other computers run that process. By continually monitoring a process each time it is run or during running of the process, any behaviour that differs from previous behaviour of the process can be noted and the mask can be modified, or this behaviour might be used to determine that a process that was once considered safe should now be considered to be unsafe.

In another embodiment, a computer 2 may have agent software installed that periodically or on-demand provides information to the community database 7 that is representative of all or selected ones of the software products loaded on or available the computer 2. In particular, this may be information on one or more of: all the locally-loaded security products (such as anti-malware systems including anti-virus software, anti-spyware, anti-adware and so on), firewall products, specific settings and

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details of which signature files are currently loaded, version details for the operating system and other software, and also information such as which files are operating and the particular version and software settings at any time. (It will be understood from the following that auditing and testing for a match for more of these criteria increases the likelihood of computers being very similarly arranged and thus reduces the rate of false negatives and positives during the match search.)

The information relating to these software products, etc. may be provided individually to the community database. Preferably however, again for reasons of data quantity for storage and transmission, the information is provided as a signature or key representative of the information (e.g. by a hashing or compression function at the computer 2). Figure 4 shows schematically how the details of all local security products, versions, signature files, firewall settings, etc. 40 are used to create a key 41. The key is transmitted to the community database 7. Since the community database 7 is provided with such information from many, possibly millions, of users' computers 2, it is likely to hold corresponding information for other computers 2 that have the same or a similar configuration of security products, etc. Thus, the community database 7 can be searched at step 42 for other computers 2 having the same or a similar combination of security products including the same setting, signature files loaded and so on.

The community database 7 in this embodiment is also provided by the agent software with details of processes

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run by every computer 2 and thus knows whether or not a process has been detected by each computer 2.

In this way, the community database 7 can be used to obtain information as to whether for example a particular, specific combination of operating system and various security products, including settings and signature files existing at a point in time, renders a particular computer 2 having those products and settings susceptible or vulnerable to any particular malware object.

In a simple example, if for example the database knows that a computer in the past has version A of anti-virus product B with downloaded signature update C, and also has a firewall D with particular settings E, and perhaps anti-spyware software F with signature updates G, but that a particular malware process P was not detected by this combination of programs at that point in time, then this information can be provided to a computer 2 that is known as having that combination of security programs/settings, and can be used to indicate that that computer 2 is vulnerable in the short term to attack by that particular malware process. This information can be presented to the user either by displaying a window 43 on the screen display of the computer 2 or by directing the user to a particular website which explains the position in more detail. The user might be informed for example that their particular combination of security products, etc., exposes their computer to a risk of being infected by the Sobig virus as that virus is not detectable by their computer. The user might be offered specific advice (e.g. to update a particular anti-virus program with a particular signature

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file) or software to download and install to remove the risk.

Thus, the community database 7, when provided with information relating to all the security products, etc. on a particular computer at a particular time, is searched for events for processes marked as "bad" that occurred on computers with that particular mix of security products and that were not locally detected. This information can then be fed back to the user of the particular computer, for example directly or by directing the user to a website. This information can be provided virtually in real-time, allowing a new user or a user of a new computer to be able to increase the computer's effective security very quickly.

The preferred method also tracks which objects are related to each other and uses the concept of ancestry to enable objects to be marked as malware. For example, any particular process may spawn child processes which are therefore related. The key relating to the first object may be inspected to identify a component that uniquely identifies the first object and that is inherited or otherwise present in the key of a descendant or other related object of the first object. This component is referred to herein as a "gene". This general technique may be used in a number of ways:

a) A known and trusted parent process is afforded the ability to create child processes which may be automatically marked as safe to run on the local computer. It is also possible that this "inherited" property may be passed down to grand children processes and so on. This

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safe status is passed to the parent's child processes and possibly, through them, further child processes (referred to here as "issue"), such signatures for the issue can all automatically be recorded in the local database as good. This allows the issue processes to be quickly marked as good, even if a connection to the community database 7 is not available.

b) By monitoring activity of the parent process, if it is later found that the parent process is malware, then all of the issue processes can all automatically be recorded in the local database as bad.

C) Similarly, by monitoring activity of the issue processes, if it is later found that one of the issue processes is malware, then one or more of the parent process and all of the other issue processes (i.e. all of the related processes in this context) can all automatically be recorded in the local database as bad.

d) Parental creation of a signature for a child or children including the ability for these to be automatically marked as either good or bad depending on the parent's behaviour and determination. Note that in some embodiments the product can "watch" or monitor the birth of a child process and automatically create the signature upon arrival. This provides the ability to monitor the creation of a bad program by another bad program. It is possible therefore to monitor the ancestry of a program so if for example the grandfather creates a program (the father) and this in turn creates a bad program (the son), it is

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possible automatically to determine the father as a bad program.

e) A feature may be included that allows for automatic forfeiture of a child's inherited ability to trigger the automatic creation of signatures on any further births because the child, as parent, has already produced bad offspring. Preferably, a rule is that if a file has one bad offspring then the inherited ability can be automatically removed.

f) An ability to watch clones or identical twins of objects (e.g. the same process running on other systems in the community) to compare the pattern of their issue and to make decisions as to whether or not to treat any particular process as malware.

One or more of these features a) to f) can be used to provide a solution to the problem of producing a security product that can be used effectively without 100% reliance on being permanently connected to the Internet, which is often impractical. Examples of this are Windows Update and other processes used more and more by vendors who wish to be able to roll out product updates automatically across the worldwide web.

Possible benefits of these types of features above conventional software are as follows. Antivirus software tends to have a cache of known bad signatures. The problem is keeping this up to date. Take the simple example of someone buying a new computer. The computer comes with an antivirus product preloaded with a signature cache.

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Between the time when the PC was built, shipped to the store and bought by the user several days or weeks will have passed. The user starts the PC and is exposed to any new virus or malware which was created after the PC was built. Full protection requires the user to connect to the internet and download updates. This cannot be guaranteed to occur ahead of other activities by the user on the internet (almost physically impossible to guarantee). With a local cache of known good processes, as in the embodiments of the present invention, it is possible to ship the computer/terminal preloaded with a pre-generated cache of signatures for all of the good (clean) software preloaded by the computer manufacturer. In this case the user can connect to the internet knowing that any new or updated programs will be immediately detected and verified. Also any auto-updating software can function forcing signatures to be automatically built for its children and more remote off-spring (i.e. grandchildren, great-grandchildren, etc).

Reference is now made to "Defeating Polymorphism: Beyond Emulation" by Adrian Stepan of Microsoft Corporation published in "Virus Bulletin Conference October 2005" and also to US 60/789156 filed on 5th April 2006, the entire content of which are hereby incorporated by reference. In that paper and patent application, there are disclosed methods of decrypting files to allow the files to be analysed to determine whether or not the file actually is malware. In US 60/789156 in particular, there is disclosed a method of unpacking/decrypting an executable computer file using a host computer, the method comprising: partitioning the executable computer file into plural basic

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blocks of code; translating at least some of the basic blocks of code into translated basic blocks of code that can be executed by the host computer; linking at least some of the translated basic blocks of code in memory of the host computer; and, executing at least some of the translated basic blocks of code on the host computer so as to enable the executable computer file to be unpacked or decrypted, whereupon the unpacked or decrypted executable computer file can be analyzed to determine whether the executable computer file is or should be classed as malware. There is also disclosed in US 60/789156 a method of unpacking/decrypting an executable computer file, the method comprising: partitioning the executable computer file into plural basic blocks of code; creating at least a read page of cache memory for at least some of the basic blocks, the read page of cache memory storing a read cached real address corresponding to a read cached virtual memory address for the respective basic block, and creating at least a write page of cache memory for at least some of the basic blocks, the write page of cache memory storing a write cached real address corresponding to a write cached virtual memory address for the respective basic block; and, emulating the executable file by executing at least some of the basic blocks of code so as to enable the executable computer file to be unpacked or decrypted, whereupon the unpacked or decrypted executable computer file can be analyzed to determine whether the executable computer file is or should be classed as malware; wherein during the execution of a basic block, at least one of the read page and the write page of cache memory is checked for a cached real address corresponding to the virtual address that is being accessed for said basic block.

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The techniques disclosed in these documents can be used in the present context when it is desired to analyse a file in detail. More generally however, the techniques disclosed in these papers, and particularly the enhanced techniques disclosed in US 60/789156, can be used to provide information about the activity of a file when it is run on a computer because the techniques disclosed in these papers emulate the running of the file and therefore allow the file's activity to be interpreted.

A further situation arises when users wish to install software while offline. In a preferred embodiment, when a user attempts to install new software while offline, agent software running on the user's computer 2 prompts the user for authorisation to allow the installation process to proceed such that the execution of the installation can itself be "authorised" by the user. This authorisation by the user is treated as a "Genesis" event and will be so termed hereinafter. However there are some processes commonly used in installation of software that communicate with other existing programs on the installation machine, e.g. Microsoft's MSIEXEC.

The Genesis approach involves a process that generates signatures as a result of the user's authorisation on the user's computer 2. Those signatures are stored in the local database on the user's computer 2. In one embodiment, those locally stored signatures are referred to as necessary by the agent software during the installation process so that the installation can proceed. Alternatively, the security checks made by the agent

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software can be switched off during the installation process. The switching off may only be for a limited duration, such as a few minutes which should be sufficient to allow most software to be installed, the off time optionally being user-configurable.

In any event, once the installation has been completed and the user's computer 2 connected to the community database 7, the agent software on the user's computer 2 can upload the signatures relating to the installation from the user's local database to the community database 7. With corresponding data from other users' computers 2, the community database 7 can then be used to make a rapid determination that the installation of this particular software is benign.

As a variant to this embodiment, when a user's computer 2 is at some point in time on-line, the agent software on the user's computer 2 may download signatures of a so-called "trusted installer" or "licensed installer". This allows the operation of a method such that a "licensed installer" and any child processes of the licensed installer are permitted to execute while a Genesis event is "current", e.g. within a period of minutes after an authorisation from the user. Preferably signatures of licensed installers are always downloaded, as and when added to the community database 7, to a remote computer 2 while online.

There may be further refinements to this method, such as to prevent licensed installers executing if a media change has occurred during the currency of a Genesis event.

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However, any unknown processes, which may be malware, may still be detected and blocked. Having a small number of licensed installers facilitates download, as minimal data is required, especially compared to downloading virus signature files. As another example, super-trusted installers, such as for example "Windows Update", may be employed whereby all new processes created by the super-trusted installer are marked immediately as safe.

In the case of an installation occurring when the remote computer 2 is connected to the community database 7, another option is that if the software that is about to be installed is not known to the community database 7, then the system will block the installation or alert the user. For example, a message may be displayed at the user's computer 2 to the effect that "You are about to install some software. This software is not known to [the community]. Are you sure you wish to proceed?".

Embodiments of the present invention have been described with particular reference to the examples illustrated. However, it will be appreciated that variations and modifications may be made to the examples described within the scope of the present invention.

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CLAIMS

1. A method of classifying a computer object as malware, the method comprising:

at a base computer, receiving data about a computer object from each of plural remote computers on which the object or similar objects are stored, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the respective remote computers, said information including at least the identify of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed;

storing at the base computer said data received from plural remote computers;

comparing in the base computer the data about the computer object received from the plural computers to identify relationships between the object and other objects or entities; and,

classifying the computer object as malware on the basis of said comparison.

2. A method according to claim 1, wherein the relationship is between objects related directly, or between objects related via other objects.

3. A method according to claim 1, wherein where an object and other objects are found to have a relationship, monitoring those related objects as a homogenous entity.

4. A method according to claim 1, comprising deducing an object to be malware based on the behaviour of a related

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object.

5. A method according to claim 1, wherein if at least one other object to which said object is related is classed as malware, then classifying said object as malware.

6. A method according to claim 1, wherein said other objects include the object or similar objects stored on at least some of the remote computers.

7. A method according to claim 1, wherein said other objects include other objects that are parent objects or child objects or otherwise process-related objects to said object.

8. A method according to claim 1, wherein the data about the computer object that is sent from the plural remote computers to the base computer and that is used in the comparison includes one or more of: executable instructions contained within or constituted by the object;

the size of the object; the current name of the object;

the physical and folder location of the object on disk;

the original name of the object;

the creation and modification dates of the object;

vendor, product and version and any other information stored within the object; and,

the object header or header held by the remote computer.

9. A method according to claim 1, wherein the data is

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sent in the form of key that is obtained by a hashing process carried out in respect of the objects on the respective remote computers.

10. A method according to claim 9, wherein the key has at least one component that represents executable instructions contained within or constituted by the object.

11. A method according to claim 9, wherein the key has at least one component that represents data about said object.

12. A method according to claim 11, wherein said data about said object includes at least one of:

the current name of the object;

the physical and folder location of the object on disk;

the original name of the object;

the creation and modification dates of the object;

vendor, product and version and any other information stored within the object;

the object header or header held by the remote computer; and,

events initiated by or involving the object when the object is created, configured or runs on the respective remote computers.

13. A method according to claim 9, wherein the key has at least one component that represents the physical size of the object.

14. A method according to claim 1, comprising

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initially classifying an object as not malware, generating a mask for said object that defines acceptable behaviour for the object, and comprising monitoring operation of the object on at least one of the remote computers and reclassifying the object as malware if the actual monitored behaviour extends beyond that permitted by the mask.

15. Apparatus for classifying a computer object as malware, the apparatus comprising:

a base computer constructed and arranged to receive data about a computer object from each of plural remote computers on which the object or similar objects are stored, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the respective remote computers, said information including at least the identify of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed;

the base computer being constructed and arranged to compare the data about the computer object received from said plural computers to identify relationships between the object and other objects or entities; and,

the base computer being constructed and arranged to classify the computer object as malware on the basis of said comparison.

16. Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to identify the relationship between objects related directly, or between objects related via other objects.

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17. Apparatus according to claim 15, wherein the base computer is constructed and arranged so as, where an object and other objects are found to have a relationship, to monitoring those related objects as a homogenous entity.

18. Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to deduce an object to be malware based on the behaviour of a related object.

19. Apparatus according to claim 15, wherein the base computer is constructed and arranged so that if at least one other object to which said object is related is classed as malware, then said object is classified as malware.

20. Apparatus according to claim 15, wherein the base computer is constructed and arranged so that said other objects include the object or similar objects stored on at least some of said remote computers.

21. Apparatus according to claim 15, wherein the base computer is constructed and arranged so that said other objects include other objects that are parent objects or child objects or otherwise process-related objects to said object.

22. Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to compare the data where the data includes one or more of:

executable instructions contained within or constituted by the object;

the size of the object; the current name of the

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object;

the physical and folder location of the object on disk;

the original name of the object;

the creation and modification dates of the object;

vendor, product and version and any other information stored within the object; and,

the object header or header held by the remote computer.

23. Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to be able to process data that is sent in the form of key that is obtained by a hashing process carried out in respect of the objects on said respective remote computers.

24. Apparatus according to claim 23, wherein the key has at least one component that represents executable instructions contained within or constituted by the object.

25. Apparatus according to claim 23, wherein the key has at least one component that represents data about said object.

26. Apparatus according to claim 25, wherein said data about said object includes at least one of: the current name of the object;

the physical and folder location of the object on disk;

the original name of the object;

the creation and modification dates of the object;

vendor, product and version and any other information

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stored within the object;

the object header or header held by the remote computer; and,

events initiated by or involving the object when the object is created, configured or runs on the respective remote computers.

27. Apparatus according to claim 23, wherein the key has at least one component that represents the physical size of the object.

28. Apparatus according to claim 15, wherein the base computer is constructed and arranged to generate a mask for an object that is initially classed not as malware, said mask defining acceptable behaviour for the object, and the base computer is constructed and arranged to monitor operation of the object on at least one of the remote computers and to reclassify the object as malware if the actual monitored behaviour extends beyond that permitted by the mask.

29. A computer program recorded on non-transitory computer readable medium comprising program instructions for causing a computer to perform the method of claim 1.

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METHODS AND APPARATUS
FOR DEALING WITH MALWARE

ABSTRACT

In one aspect, a method of classifying a computer object as malware includes receiving at a base computer data about a computer object from each of plural remote computers on which the object or similar objects are stored. The data about the computer object received from the plural computers is compared in the base computer. The computer object is classified as malware on the basis of said comparison. In one embodiment, the data about the computer object includes one or more of: executable instructions contained within or constituted by the object; the size of the object; the name of the object; the logical storage location or path of the object on the respective remote computers; the vendor of the object; the software product and version associated with the object; and, events initiated by or involving the object when the object is created, configured or runs on the respective remote computers.

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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
13/543,866	07/08/2012	2431	1790	339000-000014	29	2

CONFIRMATION NO. 7855

47604
DLA PIPER LLP US
P. O. BOX 2758
RESTON, VA 20195

FILING RECEIPT

OC000000055461283

Date Mailed: 07/23/2012

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**

Applicant(s)

Melvyn Morris, Turnditch, UNITED KINGDOM;
Paul Stubbs, Wyboston, UNITED KINGDOM;
Markus Hartwig, Milton Keynes, UNITED KINGDOM;
Darren Harter, Hucclecote, UNITED KINGDOM;

Assignment For Published Patent Application

PREVX LTD., PARK PRIDE, UNITED KINGDOM

Power of Attorney: The patent practitioners associated with Customer Number 47604

Domestic Priority data as claimed by applicant

This application is a CON of 11/477,807 06/30/2006

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
UNITED KINGDOM 0513375.6 06/30/2005

Request to Retrieve - This application either claims priority to one or more applications filed in an intellectual property Office that participates in the Priority Document Exchange (PDX) program or contains a proper **Request to Retrieve Electronic Priority Application(s)** (PTO/SB/38 or its equivalent). Consequently, the USPTO will attempt to electronically retrieve these priority documents.

If Required, Foreign Filing License Granted: 07/18/2012

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/543,866**

Projected Publication Date: 11/01/2012

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Non-Publication Request: No

Early Publication Request: No

Title

METHODS AND APPARATUS FOR DEALING WITH MALWARE

Preliminary Class

726

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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.

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 13/543,866

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			N/A	380
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	620
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	250
TOTAL CLAIMS (37 CFR 1.16(i))	29 minus 20 =	* 9			OR	x 60 =	540
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*				x 250 =	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			TOTAL	1790

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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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/543,866	07/08/2012	Melvyn Morris	339000-000014

CONFIRMATION NO. 7855

47604
DLA PIPER LLP US
P. O. BOX 2758
RESTON, VA 20195

POA ACCEPTANCE LETTER

OC000000055461725

Date Mailed: 07/23/2012

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/08/2012.

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.

/ttruong/

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

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/543,866	07/08/2012	Melvyn Morris	339000-000014

CONFIRMATION NO. 7855

47604
DLA PIPER LLP US
P. O. BOX 2758
RESTON, VA 20195

PUBLICATION NOTICE



Title:METHODS AND APPARATUS FOR DEALING WITH MALWARE

Publication No.US-2012-0278895-A1
Publication Date:11/01/2012

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.

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PTO/AIA/80 (07-12)
Approved for use through 11/30/2014. OMB 0651-0035
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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: 22442

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: 22442

OR

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

Assignee Name and Address: Prevx Limited
3 New Park Place, Pride Park
Derby, United Kingdom DE24 8DZ

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	David Huberman	Date	October 26, 2012
Name	David Huberman, Esq.	Telephone	720-842-3627
Title	Director		

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.**

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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Prevx Limited

Application No./Patent No.: 13/543,866 Filed/Issue Date: 2012-07-08

Titled: METHODS AND APPARATUS FOR DEALING WITH MALWARE

Prevx Limited, 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 018348, Frame 0840, 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

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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**

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STATEMENT UNDER 37 CFR 3.73(c)

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☐ 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.

/Bradley M. Knepper/	2012-11-30
Signature	Date
Bradley M. Knepper	44,189
Printed or Typed Name	Title or Registration Number

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:

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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)).
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.
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Electronic Acknowledgement Receipt	
EFS ID:	14351755
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Customer Number:	47604
Filer:	Bradley M. Knepper/Leslie Roberts
Filer Authorized By:	Bradley M. Knepper
Attorney Docket Number:	339000-000014
Receipt Date:	30-NOV-2012
Filing Date:	08-JUL-2012
Time Stamp:	13:55:03
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	POA_Executed_Prevx_AIA.pdf	912728 db9c376ddb33b6c00063bcf3d63fb2b6debbbc85	no	1
Warnings:					
Information:					

WBRT002881

2	Assignee showing of ownership per 37 CFR 3.73.	STATEMENT.pdf	120051 ec649be4e3d1127239b80f29342a28df239d921b	no	3
Warnings:					
Information:					
			Total Files Size (in bytes):	1032779	

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
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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
13/543,866	07/08/2012	Melvyn Morris	339000-000014

CONFIRMATION NO. 7855

POWER OF ATTORNEY NOTICE

47604
DLA PIPER LLP US
P. O. BOX 2758
RESTON, VA 20195

OC000000058042106

Date Mailed: 12/12/2012

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/30/2012.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/zabraha/

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

WBRT002883

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UNITED STATES PATENT AND TRADEMARK OFFICE

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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/543,866	07/08/2012	Melvyn Morris	339000-000014

CONFIRMATION NO. 7855

22442
Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

POA ACCEPTANCE LETTER

OC0000000058042135

Date Mailed: 12/12/2012

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/30/2012.

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.

/zabraha/

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

WBRT002884

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
				Art Unit	2431
				Examiner Name	
Sheet	1	of	4	Attorney Docket Number	6890-93-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	6338141	01/08/2002	Wells	
	2	6772346	08/03/2004	Chess	
	3	6944772	09/13/2005	Dozortsev	
	4	7013483	03/14/2006	Cohen et al.	
	5	7093239	08/15/2006	van der Made	
	6	2001/0052014	12/13/2001	Sheymov et al.	
	7	2002/0099952	07/25/2002	Lambert et al.	
	8	2003/0023857	01/30/2003	Hinchlife	
	9	2003/0084323	05/01/2003	Gales	
	10	2003/0101381	05/29/2003	Mateev	
	11	2003/0135791	07/17/2003	Natvig	
	12	2004/0006704	01/08/2004	Dahlstrom	
	13	2004/0039921	02/26/2004	Chuang	
	14	2004/0068618	04/08/2004	Hooker	
	15	2004/0073810	04/15/2004	Racine	
	16	2004/0083408	04/29/2004	Spiegel	
	17	2004/0153644	08/05/2004	McCorkendale	
	18	2004/0255165	12/16/2004	Szor	
	19	2005/0021994	01/27/2005	Barton	
	20	2005/0027686	02/03/2005	Shipp	
	21	2005/0086500	04/21/2005	Albomoz	
	22	2005/0022014	06/27/2005	Shipman	
	23	2005/0210035	09/22/2005	Kester et al.	
	24	2007/0016953	01/18/2007	Morris et al.	
	25	2008/0209562	08/28/2008	Szor	
	26	2008/0320595	12/25/2008	van der Made	
	27	2009/0271867	10/29/2009	Zhang	
	28	2012/0278891	11/01/2012	Morris et al.	

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.

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
(Use as many sheets as necessary)				Art Unit	2431
				Examiner Name	
Sheet	2	of	4	Attorney Docket Number	6890-93-CON

UNPUBLISHED U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Filing Date MM-DD-YYYY	Name of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	29	60/789156	04/05/2006	Chiriac	

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]
	30	EP 1315066	05/28/2003	BRITISH TELECOMM		
	31	EP 1280040	03/24/2004	ORKS ASSOC TECH INC		
	32	EP 1536341	06/01/2005	MICROSOFT CORPORATION		
	33	EP 1549012	06/29/2005	DATACT TECHNOLOGIES N V		
	34	EP 1549012	06/29/2005	DATACENTER TECHNOLOGIES		
	35	JP 3-233629	10/17/1991	NEC CORP		(English abstract also cited)
	36	JP 6-110718	04/22/1994	TOSHIBA CORP		(English abstract also cited)
	37	JP 9-504395	04/28/1997			
	38	JP 2003-196112	07/11/2003	HEWLETT PACKARD CO		(English abstract also cited)
	39	WO 95/12162	05/04/1995	SOPHOS PLC		
	40	WO 96/30829	10/03/1996	APPLE COMPUTER INC.		
	41	WO 99/15966	04/01/1999	SYMANTEC CORPORATION		
	42	WO 02/33525	04/25/2002	CHUANG SHYNE SONG		

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.

IPR2023-00633
Open Text Inc. EX-2018 - 89

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
(Use as many sheets as necessary)				Art Unit	2431
				Examiner Name	
Sheet	3	of	4	Attorney Docket Number	6890-93-CON

	43	WO 03/021402	03/13/2003	CRYPTIC SOFTWARE LTD		
	44	WO 2004/097602	11/11/2004	MESSAGELABS LTD		

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.
	45	English Language Abstract of JP 3-233629 published October 17, 1991
	46	English Language Abstract and Translation of JP 6-110718 published April 22, 1994
	47	English Language Abstract of JP 2003-196112 published July 11, 2003
	48	Image File Wrapper of related U.S. Application No. 11/694,261 electronically captured from PAIR on June 21, 2012
	49	ZENKIN "Fighting Against the invisible Enemy - Methods for detecting an unknown virus," Computers & Security, Elsevier Science Publishers, Amsterdam, NL, Vol. 20, No. 4, Jul. 31, 2001, pages 316-321, XP004254268
	50	International Search Report issued in PCT/GB2006/002439 issued January 15, 2007
	51	English Translation of Official Action for China Patent Application No. 201110036121.8, dated Sep. 24, 2012, 8 pages
	52	Official Action with English translation for China Patent Application No. 201110036121.8, dated Oct. 10, 2011, 14 pages
	53	Japanese Office Action issued in JP 2008-518975 on September 13, 2011
	54	English Language Translation of Japanese Office Action issued in JP 2008-518975 on September 13, 2011
	55	EXAMINER KANE, Official Action for U.S. Patent Application No. 11/477,807, mailed Jan. 13, 2010, 8 pages (Attorney's Ref. No. 6890-93)
	56	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 11/477,807, mailed May 04, 2010, 13 pages (6890-93)
	57	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 11/477,807, mailed Sep. 28, 2010, 11 pages (Attorney's Ref. No. 6890-93)
	58	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 11/477,807, mailed Feb. 15, 2011, 13 pages (Attorney's Ref. No. 6890-93)
	59	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 11/477,807, mailed Jul. 25, 2011, 13 pages (Attorney's Ref. No. 6890-93)

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.

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
				Art Unit	2431
				Examiner Name	
Sheet	4	of	4	Attorney Docket Number	6890-93-CON

	60	EXAMINER ZECHER, Notice of Allowance for U.S. Patent Application No. 11/477,807, mailed Mar. 21, 2012, 9 pages (Attorney's Ref. No. 6890-93)
	61	EXAMINER ZECHER, Notice of Allowance for U.S. Patent Application No. 11/477,807, mailed Dec. 13, 2012, 7 pages (Attorney's Ref. No. 6890-93)

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. Applicant's unique citation designation number (optional). See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. Enter Office that issued the document, by the two-letter code (WIPO Standard ST.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. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. Applicant is to place a check mark here if English language Translation is attached.

Electronic Acknowledgement Receipt	
EFS ID:	14793548
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Customer Number:	22442
Filer:	Bradley M. Knepper/Robert Roe-Pachirat
Filer Authorized By:	Bradley M. Knepper
Attorney Docket Number:	6890-93-CON
Receipt Date:	25-JAN-2013
Filing Date:	08-JUL-2012
Time Stamp:	14:24:40
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		IDS_01.pdf	738938 f70a9f11b05df56794b7d504fd1dc3529646 2b35	yes	7

WBRT002889

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	3
	Information Disclosure Statement (IDS) Form (SB08)	4	7
Warnings:			
Information:			
	Total Files Size (in bytes):	738938	

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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
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New International Application Filed with the USPTO as a Receiving Office
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2431
Melvyn Morris	)	Confirmation No.: 7855
Serial No.: 13/543,866	)	Examiner:
Filed: July 8, 2012	)	INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6890-93-CON	)	*Electronically Submitted*
Entitled: "Methods and Apparatus for Dealing With Malware"	)	

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

Dear Commissioner:

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/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).

☒ Copies of the cited references 30 – 61 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. 11/477,807 filed 06/30/06, 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. 11/477,807 filed 06/30/06 (Attorney's Ref. No. 6890-93)
- Serial No. 13/543,865 filed 07/08/12 (Attorney's Ref. No. 6890-93-DIV)

☐ 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

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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 charge such fee to Deposit Account 19-1970.
☐	**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). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	**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. Please charge Deposit Account 19-1970 in the amount of $180.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

WBRT002892

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Open Text Inc. EX-2018 - 95

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,

SHERIDAN ROSS P.C.

By: _____

Bradley M. Knepper
Registration No. 44189
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: January 24, 2017

WBRT002893

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Open Text Inc. EX-2018 - 96

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.
13/543,866	07/08/2012	INV001Melvyn Morris	6890-93-CON	7855

22442 7590 03/22/2013

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
ZECHER, CORDELIA P K	
ART UNIT	PAPER NUMBER
2432	

NOTIFICATION DATE	DELIVERY MODE
03/22/2013	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):

e-docket@sheridanross.com
srlaw@sheridanross.com

WBRT002894

IPR2023-00633
Open Text Inc. EX-2018 - 97

Office Action Summary	Application No.	Applicant(s)	
	13/543,866	MORRIS ET AL.	
	Examiner	Art Unit	
	CORDELIA ZECHER	2432	

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

Period for Reply

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

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

Status

1)☒ Responsive to communication(s) filed on *08 July 2012*.

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) *1-29* 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) *1-29* 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 *08 July 2012* 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).

a)☒ All b)☐ Some * c)☐ None of:

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

2.☒ Certified copies of the priority documents have been received in Application No. 11/477,807.

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

This action is responsive to the non-provisional application filed on July 8, 2012. Claims 1 – 29 are pending. Claims 1 and 15 are independent.

Drawings

The drawings are objected to because Figure 1 is an informal drawing and difficult to read. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The disclosure is objected to because of the following informalities: The specification fails to be separated into the appropriate sections listed above.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

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requested in correcting any errors of which applicant may become aware in the specification.

Appropriate correction is required.

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.

Claims 1 and 15 are 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.

Claims 1 and 15 refer to “the information including at least the identify of the object". It is unclear if the information includes the identity of the object, how to identify the object, or what information. For the purposes of examination it is assumed the information includes that actual identity of the object.

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:

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> (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.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 – 12, 15 – 26, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omote US Publication 2006/0085857 A1, and further in view of Dozortsev US Publication 2003/0177394 A1.

Referring to claims 1, 15 and 29, Omote teaches:

Receiving data about a computer object, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the respective remote computers, said information including at least the identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed (paragraphs 39-42).

Storing at the base computer said data received (paragraph 42-43, and 51).

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Comparing in the base computer the data about the computer object to identify relationships between the object and other objects or entities (paragraphs 41-42).

Classifying the computer object as malware on the basis of said comparison (paragraphs 63-64).

Omote does not explicitly disclose that the received information is for a plurality of remote computer. However, Dozortsev discloses suspect signatures are forwarded on to the central computer (paragraphs 22 and 45). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the central computer of Dozortsev. The suggestion/motivation for doing so would have been so that the central computer in this way communicates to the client computer the experience of other client computers connected to the central computer (paragraph 52).

Referring to claims 2 and 16, Omote discloses the relationship is between objects related directly, or between objects related via other objects (paragraph 41).

Referring to claims 3 and 17, Omote discloses an object and other objects are found to have a relationship, monitoring those related objects as a homogenous entity (paragraph 63).

Referring to claims 4 and 18, Omote discloses deducing an object to be malware based on the behavior of a related object (paragraph 63).

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Referring to claims 5 and 19, Omote discloses if at least one other object to which said object is related is classed as malware, then classifying said object as malware (paragraphs 78 and 79). In addition, Dozortsev teaches if the object is related to a malicious executable code then disabling the executable code (paragraph 25).

Referring to claims 6 and 20, Omote discloses said other objects include the object or similar objects stored on the computer (paragraph 42). Omote does not explicitly disclose that the received information is for a plurality of remote computer. However, Dozortsev discloses suspect signatures are forwarded on to the central computer (paragraphs 22 and 45). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the central computer of Dozortsev. The suggestion/motivation for doing so would have been so that the central computer in this way communicates to the client computer the experience of other client computers connected to the central computer (paragraph 52).

Referring to claims 7 and 21, Omote discloses said other objects include other objects that are parent objects or child objects or otherwise process-related objects to said object (paragraph 41 and 63).

Referring to claims 8 and 22, Omote teaches the data about the computer object that is used in the comparison includes the current name of the object (paragraph 40). Omote does not explicitly disclose that the received information is for a plurality of

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remote computer. However, Dozortsev discloses suspect signatures are forwarded on to the central computer (paragraphs 22 and 45). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the central computer of Dozortsev. The suggestion/motivation for doing so would have been so that the central computer in this way communicates to the client computer the experience of other client computers connected to the central computer (paragraph 52).

Referring to claims 9 and 23, Dozortsev discloses the data is sent in the form of key that is obtained by a hashing process carried out in respect of the objects on the respective remote computers (paragraph 21). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the unique signature of Dozortsev. The suggestion/motivation for doing so would have been to have a unique signature of the executable code for comparison (paragraph 21).

Referring to claims 10 and 24, Dozortsev discloses the key has at least one component that represents executable instructions contained within or constituted by the object (paragraph 21). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would

have been obvious to one of ordinary skill in the art, having the teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the unique signature of Dozortsev. The suggestion/motivation for doing so would have been to have a unique signature of the executable code for comparison (paragraph 21).

Referring to claims 11 and 25, Dozortsev discloses the key has at least one component that represents data about said object (paragraph 21). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the unique signature of Dozortsev. The suggestion/motivation for doing so would have been to have a unique signature of the executable code for comparison (paragraph 21).

Referring to claims 12 and 26, Omote discloses said data about said object includes the current name of the object (paragraph 40).

Claims 13, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omote in view of Dozortsev as applied above, and further in view of Barton et al's US Publication 2005/0021994 A1.

Omote in view of Dozortsev discloses all the limitations of the parent claims. Omote in view of Dozortsev does not explicitly disclose the data about the object including the size of the object. However, Barton discloses indicating for the object the

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file name, size and location (pages 2-3, paragraph 39). Omote in view of Dozortsev and Barton are analogous art because they are from the same field of endeavor, malware detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Omote in view of Dozortsev and Barton before him or her, to modify the rules of Omote in view of Dozortsev to include the data size of Barton. The suggestion/motivation for doing so would have been the characteristics are strongly indicative of a particular file being one of the candidates (page 1, paragraph 14).

Claims 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omote in view of Dozortsev, as applied above, and further in view of Kester et al US Publication 2005/0210035 A1.

Omote in view of Dozortsev teaches all the limitations of the parent claim, and initially classifying an object as not malware, and changing the status of the object after an investigation (Dozortsev, paragraphs 37-41). Omote in view of Dozortsev does not explicitly disclose generating a mask for said object that defines acceptable behaviour for the object, and monitoring operation of the object on at least one of the remote computers and reclassifying the object as malware if the actual monitored behaviour extends beyond that permitted by the mask. However, Kester discloses determining access privileges for an application based on the expected network behavior of an application (paragraph 43), and then monitoring the behavior of an application based on access privileges(paragraphs 41, 55 and 56).

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Omote in view of Dozortsev and Kester are from the same field of endeavor, malware. At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the investigation of Omote in view of Dozortsev to include the privileges based on behavior of Kester. The suggestion for doing so would have been for the system to be able to keep or change a previous access privilege based on the subsequent activity of an application (paragraph 41).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CORDELIA ZECHER whose telephone number is (571)272-7771. The examiner can normally be reached on Monday - Thursday 8:00 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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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.

/CORDELIA ZECHER/
Primary Examiner, Art Unit 2432

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Notice of References Cited	Application/Control No. 13/543,866	Applicant(s)/Patent Under Reexamination MORRIS ET AL.	
	Examiner CORDELIA ZECHER	Art Unit 2432	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2003/0177394 A1	09-2003	Dozortsev, Dmitri	713/201
*	B	US-2005/0021994 A1	01-2005	Barton et al.	713/200
*	C	US-2005/0210035 A1	09-2005	Kester et al.	707/010
*	D	US-2006/0085857 A1	04-2006	Omote et al.	726/024
	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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13543866	MORRIS ET AL.
	Examiner	Art Unit
	CORDELIA ZECHER	2432

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
726	24 (text)	3/14/13	cz

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor Search	3/14/13	cz
Searched EAST (see attached)	3/14/13	cz

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
				Art Unit	2431
				Examiner Name	
Sheet	1	of	4	Attorney Docket Number	6890-93-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	6338141	01/08/2002	Wells	
	2	6772346	08/03/2004	Chess	
	3	6944772	09/13/2005	Dozortsev	
	4	7013483	03/14/2006	Cohen et al.	
	5	7093239	08/15/2006	van der Made	
	6	2001/0052014	12/13/2001	Sheymov et al.	
	7	2002/0099952	07/25/2002	Lambert et al.	
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	10	2003/0101381	05/29/2003	Mateev	
	11	2003/0135791	07/17/2003	Natvig	
	12	2004/0006704	01/08/2004	Dahlstrom	
	13	2004/0039921	02/26/2004	Chuang	
	14	2004/0068618	04/08/2004	Hooker	
	15	2004/0073810	04/15/2004	Racine	
	16	2004/0083408	04/29/2004	Spiegel	
	17	2004/0153644	08/05/2004	McCorkendale	
	18	2004/0255165	12/16/2004	Szor	
	19	2005/0021994	01/27/2005	Barton	
	20	2005/0027686	02/03/2005	Shipp	
	21	2005/0086500	04/21/2005	Albomoz	
	22	2005/0022014	06/27/2005	Shipman	
	23	2005/0210035	09/22/2005	Kester et al.	
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	25	2008/0209562	08/28/2008	Szor	
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	28	2012/0278891	11/01/2012	Morris et al.	

Examiner Signature	/Cordelia Zecher/	Date Considered	03/14/2013

*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.

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
(Use as many sheets as necessary)				Art Unit	2431
				Examiner Name	
Sheet	2	of	4	Attorney Docket Number	6890-93-CON

UNPUBLISHED U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Filing Date MM-DD-YYYY	Name of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	29	60/789156	04/05/2006	Chiriac	

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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]
/C.Z./	30	EP 1315066	05/28/2003	BRITISH TELECOMM		
/C.Z./	31	EP 1280040	03/24/2004	ORKS ASSOC TECH INC		
/C.Z./	32	EP 1536341	06/01/2005	MICROSOFT CORPORATION		
/C.Z./	33	EP 1549012	06/29/2005	DATACT TECHNOLOGIES N V		
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/C.Z./	35	JP 3-233629	10/17/1991	NEC CORP		(English abstract also cited)
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/C.Z./	40	WO 96/30829	10/03/1996	APPLE COMPUTER INC.		
/C.Z./	41	WO 99/15966	04/01/1999	SYMANTEC CORPORATION		
/C.Z./	42	WO 02/33525	04/25/2002	CHUANG SHYNE SONG		

Examiner Signature	/Cordelia Zecher/	Date Considered	03/14/2013

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
				Art Unit	2431
				Examiner Name	
Sheet	3	of	4	Attorney Docket Number	6890-93-CON

/C.Z./	43	WO 03/021402	03/13/2003	CRYPTIC SOFTWARE LTD		
/C.Z./	44	WO 2004/097602	11/11/2004	MESSAGELABS LTD		

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.
/C.Z./	45	English Language Abstract of JP 3-233629 published October 17, 1991
/C.Z./	46	English Language Abstract and Translation of JP 6-110718 published April 22, 1994
/C.Z./	47	English Language Abstract of JP 2003-196112 published July 11, 2003
/C.Z./	48	Image File Wrapper of related U.S. Application No. 11/694,261 electronically captured from PAIR on June 21, 2012
/C.Z./	49	ZENKIN "Fighting Against the invisible Enemy - Methods for detecting an unknown virus," Computers & Security, Elsevier Science Publishers, Amsterdam, NL, Vol. 20, No. 4, Jul. 31, 2001, pages 316-321, XP004254268
/C.Z./	50	International Search Report issued in PCT/GB2006/002439 issued January 15, 2007
/C.Z./	51	English Translation of Official Action for China Patent Application No. 201110036121.8, dated Sep. 24, 2012, 8 pages
/C.Z./	52	Official Action with English translation for China Patent Application No. 201110036121.8, dated Oct. 10, 2011, 14 pages
/C.Z./	53	Japanese Office Action issued in JP 2008-518975 on September 13, 2011
/C.Z./	54	English Language Translation of Japanese Office Action issued in JP 2008-518975 on September 13, 2011
	55	EXAMINER KANE, Official Action for U.S. Patent Application No. 11/477,807, mailed Jan. 13, 2010, 8 pages (Attorney's Ref. No. 6890-93)
	56	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 11/477,807, mailed May 04, 2010, 13 pages (6890-93)
	57	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 11/477,807, mailed Sep. 28, 2010, 11 pages (Attorney's Ref. No. 6890-93)
	58	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 11/477,807, mailed Feb. 15, 2011, 13 pages (Attorney's Ref. No. 6890-93)
	59	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 11/477,807, mailed Jul. 25, 2011, 13 pages (Attorney's Ref. No. 6890-93)

Examiner Signature	/Cordelia Zecher/	Date Considered	03/14/2013

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Substitute for form 1449/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(Use as many sheets as necessary)*				*Complete if Known*	
				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
				Art Unit	2431
				Examiner Name	
Sheet	4	of	4	Attorney Docket Number	6890-93-CON

	60	EXAMINER ZECHER, Notice of Allowance for U.S. Patent Application No. 11/477,807, mailed Mar. 21, 2012, 9 pages (Attorney's Ref. No. 6890-93)
	61	EXAMINER ZECHER, Notice of Allowance for U.S. Patent Application No. 11/477,807, mailed Dec. 13, 2012, 7 pages (Attorney's Ref. No. 6890-93)

Examiner Signature	/Cordelia Zecher/	Date Considered	03/14/2013

*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. Applicant's unique citation designation number (optional). See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. Enter Office that issued the document, by the two-letter code (WIPO Standard ST.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. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.Z./

IPR2023-00633
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BIB DATA SHEET

CONFIRMATION NO. 7855

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
13/543,866	07/08/2012	726	2432	6890-93-CON

APPLICANTS

Melvyn Morris, Turnditch, UNITED KINGDOM;
Paul Stubbs, Wyboston, UNITED KINGDOM;
Markus Hartwig, Milton Keynes, UNITED KINGDOM;
Darren Harter, Hucclecote, UNITED KINGDOM;

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

This application is a CON of 11/477,807 06/30/2006

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

UNITED KINGDOM 0513375.6 06/30/2005

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

07/18/2012

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	/CORDELIA P K ZECHER/ Examiner's Signature	☐ Initials	UNITED KINGDOM	3	29	2

ADDRESS

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202
UNITED STATES

TITLE

METHODS AND APPARATUS FOR DEALING WITH MALWARE

FILING FEE RECEIVED		
1790	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	"20070016953"	US-PGPUB; USPAT	OR	ON	2010/01/07 08:58
S2	1	("20060026684").PN.	US-PGPUB; USPAT	OR	OFF	2010/04/28 08:32
S3	1	S2 and malware	US-PGPUB; USPAT	OR	ON	2010/04/28 08:33
S4	1164	726/24.ccls.	US-PGPUB; USPAT	OR	ON	2010/04/28 08:33
S5	2821	726/23-25.ccls.	US-PGPUB; USPAT	OR	ON	2010/04/28 08:34
S6	6	((("6772346") or ("6944772") or ("20040006704") or ("20040073810") or ("20050021994") or ("20040153644")).PN.	US-PGPUB; USPAT	OR	OFF	2010/04/28 09:18
S7	1	("20030177394").PN.	US-PGPUB; USPAT	OR	OFF	2010/04/28 10:48
S8	0	central near database with each with network	US-PGPUB; USPAT	OR	ON	2010/04/28 12:51
S9	0	database with each with network	US-PGPUB; USPAT	OR	ON	2010/04/28 12:51
S10	115859	database with network	US-PGPUB; USPAT	OR	ON	2010/04/28 12:52
S11	2632	central near database with network	US-PGPUB; USPAT	OR	ON	2010/04/28 12:52
S12	30	central near database with network with separate	US-PGPUB; USPAT	OR	ON	2010/04/28 12:53
S13	17	central near database with distribute with network	US-PGPUB; USPAT	OR	ON	2010/04/28 12:53
S14	199	central near database with distribut$3 with network	US-PGPUB; USPAT	OR	ON	2010/04/28 12:54
S15	0	central near database with distribute with network with known	US-PGPUB; USPAT	OR	ON	2010/04/28 12:54
S16	4	central near database with distribut$3 with network with known	US-PGPUB;	OR	ON	2010/04/28 12:55

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			USPAT			
S17	240	database with distribut$3 with network with known	US-PGPUB; USPAT	OR	ON	2010/04/28 12:55
S18	24	database with distribut$3 with network with known and (virus or malware)	US-PGPUB; USPAT	OR	ON	2010/04/28 12:56
S19	4	("20030023857" | "20050027686" | "6338141" | "7013483").PN.	US-PGPUB; USPAT	OR	ON	2011/02/09 08:21
S20	3433	726/23-25.ccls.	US-PGPUB; USPAT	OR	ON	2011/02/09 08:35
S21	282	S20 and mask$3	US-PGPUB; USPAT	OR	ON	2011/02/09 08:35
S22	35	S20 and mask$3 and malware	US-PGPUB; USPAT	OR	ON	2011/02/09 08:35
S23	328	S20 and control$3 with environment	US-PGPUB; USPAT	OR	ON	2011/02/09 08:43
S24	65	S20 and control$3 with environment and malware	US-PGPUB; USPAT	OR	ON	2011/02/09 08:43
S25	18	S20 and defin$3 with boundary and malware	US-PGPUB; USPAT	OR	ON	2011/02/09 08:45
S26	5	S20 and access$3 with rights with object and malware	US-PGPUB; USPAT	OR	ON	2011/02/09 08:46
S27	2	"20020099952"	US-PGPUB; USPAT	OR	ON	2011/02/09 09:11
S28	24	(updat$3 or modif$4) with token and S20	US-PGPUB; USPAT	OR	ON	2011/02/09 10:54
S29	37	("20010049793" | "20030225698" | "20040068721" | "20050203819" | "20060031686" | "4713753" | "4805222" | "4926476" | "5367624" | "5481700" | "5819091" | "5915025" | "5958051" | "5978484" | "5983349" | "5991519" | "6295605" | "6378069" | "6405202" | "6775779" | "6931540" | "6981281" | "7028180" | "7051366" | "7076557").PN. OR ("7350204").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/02/09 11:23
S30	32	S29 and (modif$4 or updat$3)	US-PGPUB; USPAT; USOCR	OR	ON	2011/02/09 11:23
S31	6232	automatic$4 with (updat$3 or chang$3 or modif$4) with access	US-PGPUB; USPAT; USOCR	OR	ON	2011/02/09 11:35
S32	29	S20 and S31	US-PGPUB; USPAT;	OR	ON	2011/02/09 11:35

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			USOCR			
S33	18	"7350204"	US-PGPUB; USPAT	OR	ON	2011/07/21 09:19
S34	1	"7350204".pn.	US-PGPUB; USPAT	OR	ON	2011/07/21 09:19
S35	42	("20010049793" | "20030225698" | "20040068721" | "20050203819" | "20060031686" | "4713753" | "4805222" | "4926476" | "5367624" | "5481700" | "5819091" | "5915025" | "5958051" | "5978484" | "5983349" | "5991519" | "6295605" | "6378069" | "6405202" | "6775779" | "6931540" | "6981281" | "7028180" | "7051366" | "7076557").PN. OR ("7350204").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/07/21 09:21
S36	106	("2002/0099952").URPN.	USPAT	OR	ON	2011/07/21 09:46
S37	16	("20020026578" | "20020099952" | "20020124170" | "20030033535" | "20040064708" | "20040078604" | "20040117615" | "20050138388" | "5941947" | "6151590" | "6397261" | "6571335" | "6810525" | "7010600" | "7194664").PN. OR ("7509497").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/07/21 09:49
S38	1	(S35 or S36 or S37) and behaviour	US-PGPUB; USPAT; USOCR	OR	ON	2011/07/21 09:50
S39	1	"7698713".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2011/07/21 09:51
S40	2	"20030131152"	US-PGPUB; USPAT; USOCR	OR	ON	2011/07/21 09:52
S41	57	(S35 or S36 or S37) and behavior	US-PGPUB; USPAT; USOCR	OR	ON	2011/07/21 09:52
S42	2	"20050210035"	US-PGPUB; USPAT; USOCR	OR	ON	2011/07/21 10:01
S43	2	S42 and behav$5	US-PGPUB; USPAT; USOCR	OR	ON	2011/07/21 10:04
S44	20	("20040153644" | "6338141" | "20030084323" | "20050027686" | "6772346" | "20050210035" | "6944772" | "20050021994" | "20030023857" | "20040083408" | "20050022014" | "20040006704" | "20010052014" | "20030101381" | "7013483" | "20020099952" | "20040039921" | "20050086500" | "20040073810" | "20050021994" | "20030177394").PN.	US-PGPUB; USPAT	OR	ON	2012/02/17 13:30

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S45	5	("20040083408" | "20050022014" | "20030101381" | "20040039921" | "20050086500").PN.	US-PGPUB; USPAT	OR	ON	2012/02/17 13:34
S46	3172	generat$3 with profile with automatic$4	US-PGPUB; USPAT	OR	ON	2012/02/17 14:56
S47	4255	726/23-25.ccls.	US-PGPUB; USPAT	OR	ON	2012/02/17 14:56
S48	25	generat$3 with profile with automatic$4 and S47	US-PGPUB; USPAT	OR	ON	2012/02/17 14:56
S55	7	("20030135791" | "20040068618" | "20040255165" | "20080209562" | "20080320595" | "20090271867" | "7093239").PN.	US-PGPUB; USPAT	OR	ON	2012/12/11 08:38
S59	1	"20120278895"	US-PGPUB; USPAT	OR	ON	2013/03/14 08:28
S60	5	((("20120260340") or ("20070016953") or ("20120266208") or ("20120260304") or ("20120278891")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/14 08:36
S61	2355	726/24.ccls.	US-PGPUB; USPAT	OR	ON	2013/03/14 08:50
S62	28	("20010052014" | "20020099952" | "20030023857" | "20030084323" | "20030103810" | "20030135791" | "20040006704" | "20040039921" | "20040068618" | "20040073810" | "20040083408" | "20040153644" | "20040255165" | "20050021994" | "20050022014" | "20050027686" | "20050086500" | "20050210035" | "20070016953" | "20080209562" | "20080320595" | "20090271867" | "20120278891" | "6338141" | "6772346" | "6944772" | "7013483" | "7093239").PN.	US-PGPUB; USPAT	OR	ON	2013/03/14 09:03
S63	8	S62 and (parent or child)	US-PGPUB; USPAT	OR	ON	2013/03/14 09:14
S64	439	S61 and (parent or child)	US-PGPUB; USPAT	OR	ON	2013/03/14 09:21
S65	17	S61 and (parent or child) with relationship	US-PGPUB; USPAT	OR	ON	2013/03/14 09:28
S66	21	("20020069370" | "20020099952" | "20020116627" | "20020162015" | "20030172109" | "20040078591" | "20040148524" | "20040255163" | "20050182958" | "20070107052" | "5822517" | "5867647" | "6338141" | "6405318" | "6499109" | "6560323" | "6973577" | "7024694" | "7174569" | "7216225").PN. OR ("7752668").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2013/03/14 10:20
S67	3	("2006/0085857").URPN.	USPAT	OR	ON	2013/03/14 10:20

WBRT002917

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Open Text Inc. EX-2018 - 120

S68	8	(S66 or S67) and (parent or child)	USPAT	OR	ON	2013/03/14 10:20
S69	1	"20040078591"	US-PGPUB; USPAT	OR	ON	2013/03/14 10:24

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S49	1022	726/24.ccls.	USPAT	OR	ON	2012/02/17 14:59
S50	0	(behavior and malware and classify$3 and automatic$4 and generat$3 and monitor$3 and allow$3).clm.	USPAT	OR	ON	2012/02/17 15:06
S51	1036	726/24.ccls.	USPAT	OR	ON	2012/03/12 11:36
S52	0	(class$6 and object and malware and automatic$4 and generat$3 and mask$3 and monitor$3).clm.	USPAT	OR	ON	2012/03/12 11:37
S53	0	(class$6 and object and malware and automatic$4 and generat$3 and monitor$3).clm.	USPAT	OR	ON	2012/03/12 11:37
S54	0	S53 and S51	USPAT	OR	ON	2012/03/12 11:37
S56	1319	726/24.ccls.	USPAT	OR	ON	2012/12/11 08:43
S57	0	(class$6 and object and malware and automatic$4 and generat$3 and monitor$3).clm.	USPAT	OR	ON	2012/12/11 08:43
S58	0	S57 and S56	USPAT	OR	ON	2012/12/11 08:43

3/ 18/ 2013 8:50:52 AM
C:\ Users\ czecher\ Documents\ EAST\ Workspaces\ 13543866.wsp

WBRT002918

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13543866	MORRIS ET AL.
	Examiner	Art Unit
	CORDELIA ZECHER	2432

✓	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	03/14/2013								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
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	25	✓								
	26	✓								
	27	✓								
	28	✓								
	29	✓								

WBRT002919

IPR2023-00633
Open Text Inc. EX-2018 - 122

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United States Patent and Trademark Office
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www.uspto.gov

PRIORITY DOCUMENT EXCHANGE

FAILURE STATUS REPORT

An attempt by the Office to electronically retrieve, under the Priority Document Exchange programs (PDX and DAS), 0513375.6 to which priority is claimed has FAILED on 06/10/2013.

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M-F 6AM - Midnight (Eastern Time)

IPR2023-00633
Open Text Inc. EX-2018 - 123

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
(Use as many sheets as necessary)				Art Unit	2432
				Examiner Name	Cordelia P.K. Zecher
Sheet	1	of	1	Attorney Docket Number	6890-93-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	7793338	09/07/2010	Beddoe 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.
	2	Official Action for China Patent Application No. 201110036124.1, dated Apr. 17, 2013, 7 pages
	3	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 13/543,865, mailed Apr. 15, 2013, 9 pages (Attorney's Ref. No. 6890-93-DIV)

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.

IPR2023-00633
Open Text Inc. EX-2018 - 124

Electronic Patent Application Fee Transmittal	
Application Number:	13543866
Filing Date:	08-Jul-2012
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Filer:	Brent Robert Lindon/Robert Roe-Pachirat
Attorney Docket Number:	6890-93-CON
Filed as Large 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:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

WBRT002923

Electronic Acknowledgement Receipt	
EFS ID:	16095994
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Customer Number:	22442
Filer:	Brent Robert Lindon/Robert Roe-Pachirat
Filer Authorized By:	Brent Robert Lindon
Attorney Docket Number:	6890-93-CON
Receipt Date:	20-JUN-2013
Filing Date:	08-JUL-2012
Time Stamp:	13:48:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$180
RAM confirmation Number	5
Deposit Account	191970
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	CN2011100361241_OA_04-17-2013.pdf	445813 cde3cbe1ba5ef83ef7c5dea97890518411ce976e	no	7
Warnings:					
Information:					
2	Non Patent Literature	6890-93-DIV_OA_04-15-2013.pdf	321027 da384ccee5e4ca96e1eb2ca465c75e12d49e837b	no	9
Warnings:					
Information:					
3		6890-93-CON_IDS_02.pdf	150459 086f4a1d440d17d263885806f366564832c5eeaa	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:					
4	Fee Worksheet (SB06)	fee-info.pdf	30536 130abd9a383b015e56f1f9f06dd9debb418d329f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	947835		

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.

中华人民共和国国家知识产权局 FF110110

100020

北京市朝阳区东三环中路1号环球金融中心办公楼东楼20层 北京市
金杜律师事务所
王茂华 黄倩

发文日：

2013年04月17日

申请号或专利号：201110036124.1　　发文序号：2013041200760260

申请人或专利权人：普瑞维克斯有限公司

发明创造名称：用于处理恶意软件的方法和装置

第三次审查意见通知书

1. ☒审查员已经收到申请人于2012年12月5日提交的意见陈述书，在此基础上审查员对上述专利申请继续进行实质审查。

☐根据国家知识产权局专利复审委员会于_____年_____月_____日作出的复审决定，审查员对上述专利申请继续进行实质审查。

☐_____

2. ☐经审查，申请人于_____提交的修改文件，不符合专利法实施细则第51条第3款的规定，不予接受。

3. 继续审查是针对下列申请文件进行的：

☐上述意见陈述书中所附的经修改的申请文件。

☒前次审查意见通知书所针对的申请文件以及上述意见陈述书中所附的经修改的申请文件替换文件。

☐前次审查意见通知书所针对的申请文件。

☐上述复审决定所确定的申请文件。

☐_____

4. ☒本通知书未引用新的对比文件。

☐本通知书引用下列对比文件(其编号续前，并在今后的审查过程中继续沿用)：

编号	文件号或名称	公开日期（或抵触申请的申请日）

5. 审查的结论性意见：

关于说明书：

☐申请的内容属于专利法第5条规定的不授予专利权的范围。

☐说明书不符合专利法第26条第3款的规定。

☐说明书的修改不符合专利法第33条的规定。

☐说明书的撰写不符合专利法实施细则第17条的规定。

☐_____

关于权利要求书：

☐权利要求_____不符合专利法第2条第2款的规定。

☐权利要求_____不符合专利法第9条第1款的规定。

中华人民共和国国家知识产权局 专利审查业务章

210403
2010.2

纸件申请，回函请寄：100088 北京市海淀区蓟门桥西土城路6号 国家知识产权局专利局受理处收
电子申请，应当通过电子专利申请系统以电子文件形式提交相关文件。除另有规定外，以纸件等其他形式提交的文件视为未提交。

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☐权利要求_____不具备专利法第22条第2款规定的新颖性。
☒权利要求 1-36 不具备专利法第22条第3款规定的创造性。
☐权利要求_____不具备专利法第22条第4款规定的实用性。
☐权利要求_____属于专利法第25条规定的不授予专利权的范围。
☐权利要求_____不符合专利法第26条第4款的规定。
☐权利要求_____不符合专利法第31条第1款的规定。
☐权利要求_____的修改不符合专利法第33条的规定。
☐权利要求_____不符合专利法实施细则第19条的规定。
☐权利要求_____不符合专利法实施细则第20条的规定。
☐权利要求_____不符合专利法实施细则第21条的规定。
☐权利要求_____不符合专利法实施细则第22条的规定。
☐_____

☐申请不符合专利法第26条第5款或者实施细则第26条的规定。
☐申请不符合专利法第20条第1款的规定。
☐分案申请不符合专利法实施细则第43条第1款的规定。
上述结论性意见的具体分析见本通知书的正文部分。

6.基于上述结论性意见，审查员认为：
☐申请人应当按照通知书正文部分提出的要求，对申请文件进行修改。
☐申请人应当在意见陈述书中论述其专利申请可以被授予专利权的理由，并对通知书正文部分中指出的不符合规定之处进行修改，否则将不能授予专利权。
☒专利申请中没有可以被授予专利权的实质性内容，如果申请人没有陈述理由或者陈述理由不充分，其申请将被驳回。
☐_____

7. 申请人应注意下列事项：

（1）根据专利法第37条的规定，申请人应当在收到本通知书之日起的2个月内陈述意见，如果申请人无正当理由逾期不答复，其申请将被视为撤回。

（2）申请人对其申请的修改应当符合专利法第33条的规定，不得超出原说明书和权利要求书记载的范围，同时申请人对专利申请文件进行的修改应当符合专利法实施细则第51条第3款的规定，按照本通知书的要求进行修改。

（3）申请人的意见陈述书和/或修改文本应当邮寄或递交国家知识产权局专利局受理处，凡未邮寄或递交给受理处的文件不具备法律效力。

（4）未经预约，申请人和/或代理人不得前来国家知识产权局与审查员举行会晤。

8. 本通知书正文部分共有 3 页，并附有下列附件：
☐引用的对比文件的复印件共_____份_____页。
☐_____

审查员：赵晓敏　　联系电话：　　审查部门：专利审查协作北京中心发明审查部

专利审查业务章

纸件申请，回函请寄：100088 北京市海淀区蓟门桥西土城路6号　国家知识产权局专利局受理处收
电子申请，应当通过电子专利申请系统以电子文件形式提交相关文件。除另有规定外，以纸件等其他形式提交的文件视为未提交。

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中华人民共和国国家知识产权局

第三次审查意见通知书

申请号:2011100361241

申请人提交了意见陈述书和经修改的申请文件，审查员继续进行审查，再次提出如下审查意见。

权利要求 1-36 不具备专利法第二十二条第三款规定的创造性。

1、权利要求 1 请求保护一种将计算机对象分类为恶意软件的方法，对比文件 1（EP1549012A）公开了一种在网络环境中识别文件内容的方法，并具体公开了以下技术特征（参见对比文件 1 的说明书第 42-43 段、权利要求 1）：所述网络环境包括连接到网络环境的其余部分的至少一个本地计算设备（相当于本权利要求的多个远程计算机，其中“远程”相对于下面将提及的“中央基础设施”而言），所述网络环境的其余部分包括中央基础设施（相当于基计算机）；为所述至少一个本地计算设备中的一个上的新文件（相当于本权利要求的计算机对象）计算参考值（相当于本权利要求的关于计算机对象的数据）；将所述参考值传送到所述中央基础设施；中央基础设施包括数据库 110，其包括针对已存在于本地计算设备之一上的文件而计算出的每个哈希值的记录；（在中央基础设施处，）将所述参考值与先前存储于网络环境的其余部分中的参考值进行比较；根据所述比较，如果比较被匹配，则确定已识别该新文件的内容，并检出相应的内容属性；内容属性可指示文件包括病毒（即将相应的文件分类为恶意软件）等。

权利要求 1 所述方案同对比文件 1 的区别在于：权利要求 1 中具体限定了计算机对象的数据包括关于当创建、配置对象或涉及对象事件的信息，并具体限定了信息包括发起事件对象的关键字、事件类型、以及关键字或在其上执行事件的其他对象的身份；以及相应的比较和识别对象以及其他对象或实体之间的关系来讲对象分类为恶意软件。对于本领域技术人员来说，当创建、配置对象或涉及对象事件的信息属于与对象相关的公知的信息，限定上述内容为对象数据的具体内容，并限定具体的信息内容为对象关键字、对象类型以及关键字或在其上执行事件的其他对象的身份，即限定对象数据以及相关特定信息的具体内容，其属于本领域惯用手段。而上述具体内容信息的获取也属于本领域常规技术，将上述具体内容与对象相关并基于其比较来确定对象是否为恶意软件，属于本领域在进行数据内容分类时的惯用手段。因此，在对比文件 1 的基础上结合本领域惯用手段从而得到权利要求 1 所述方案，对于本领域技术人员来说是显而易见的，权利要求 1 不具备突出的实质性特点和显著的进步，不具备专利法第二十二条第三款规定的创造性。

2、权利要求 2-3 引用权利要求 1，其附加特征均为设定了基于对象与其他对象的具体关系而将对象分类为恶意软件的规则：新行为是恶意的则将对象分类为恶意软件、以及相关对象为恶意时分类该对象为恶意。该规则是本领域技术人员根据实际需要和情况可选择的，属于本领域在进行内容分类时的惯用手段。因此，当其引用的权利要求 1 不具备创造性时，权利要求 2-3 也不具备创造性。

3、权利要求 4-5 引用权利要求 1，对于本领域技术人员来说，对象包括存储在远程计算机

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上的对象或类似对象、具有父子关系的对象或者在进程上相关的对象，即具体设置对象包括的内容，属于本领域技术人员在进行内容分类时的惯用手段。因此，当其引用的权利要求 1 不具备创造性时，权利要求 4-5 也不具备创造性。

4、权利要求 6 引用权利要求 1-5 之任一，对于本领域技术人员来说，根据具体情况和实际需要选择设定对象数据的具体内容，属于本领域惯用手段。因此，当其引用的权利要求 1-5 均不具备创造性时，权利要求 6 也不具备创造性。

5、权利要求 7 对权利要求 1-6 中任一项作了进一步限定，而对比文件 1 已公开了所计算的关于计算机对象的数据为哈希值（即通过哈希进程或哈希函数获得）（参见对比文件 1 的说明书第 42 段），而所谓“关键字”也就是足以唯一确定对象的标识信息，其在定义和实际功用上与哈希值一致，对于本领域技术人员来说，可以选择设置利用关键字还是哈希值来发送数据，利用关键字来识别发送特定数据，属于本领域惯用手段。因此，当其引用的权利要求 1-6 不具备创造性时，权利要求 7 也不具备创造性。

5、权利要求 8-11 直接或间接引用权利要求 7，其附加特征均对所述关键字所表示的具体含义作了进一步限定，然而，关键字所表示的含义显然是可以根据具体情况和实际需要而随意选择或设定的，从而这是所属技术领域的惯用手段。因此，当其引用的权利要求 7 不具备创造性时，权利要求 8-11 也不具备创造性。

6、权利要求 12 引用权利要求 1-11 之任一，其附加特征为利用生成对象的定义对象可接受行为的掩码来分类对象为恶意软件，基于该特征，该权利要求要解决的问题是如何对对象进行恶意非恶意的分类，对比文件 2（US2005/0086500A1）公开了一种入侵检测方法，即对应用对象的行为进行分类（参见对比文件 2 摘要、说明书第 8 段），其中生成一应用对象行为简档（behavior profile），该行为简档定义应用对象的规范行为、即可接受行为，监控应用对象的执行操作，当监控的应用对象的操作不符合行为建档的规范时、即超出简档允许的行为，则发送表明该应用对象属于入侵应用的消息、即将该应用对象分类为恶意的入侵对象。其中行为建档定义应用对象允许行为，其相当于权利要求 12 中的掩码。因此，对比文件 2 公开了权利要求 12 大部分附加特征，至于初始化时将对象分类为非恶意软件，属于本领域在进行数据初始化时的惯用手段。因此，在对比文件 1 的基础上结合对比文件 2 以及本领域惯用手段从而得到权利要求 12 所述方案，对于本领域技术人员来说是显而易见的，权利要求 12 不具备突出的实质性特点和显著的进步，不具备专利法第二十二条第三款规定的创造性。

6、权利要求 13-24 请求保护一种将计算机对象分类为恶意软件的装置，该装置包括的基计算机的功能与权利要求 1-12 的方法步骤完全对应一致，对比文件 1 公开了与基计算机对应的中央基础设施，因此，基于评述权利要求 1-12 不具备创造性的类似理由，权利要求 13-24 也不具备突出的实质性特点和显著的进步，不具备专利法第二十二条第三款规定的创造性。

7、权利要求 25-36 请求保护一种将计算机对象分类为恶意软件的设备，该设备与权利要求 1-12 所述方法是完全对应一致的，因此，基于评述权利要求 1-12 不具备创造性的相同理由，权利要求 25-36 也不具备突出的实质性特点和显著的进步，不具备专利法第二十二条第三款规定

专利申查业务章

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的创造性。

基于上述理由，本申请的权利要求不具备授权前景，而且本申请的说明书中也没有记载其它任何可获得专利权的实质性内容，因而即使对申请文件进行修改，本申请也不具备被授予专利权的前景。如果申请人在本通知书规定的答复期限内不能提出具有说服力的理由，本申请将被驳回。

审查员姓名：赵晓敏

审查员代码：[illegible]

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纸件申请，回函请寄：100088 北京市海淀区蓟门桥西土城路6号 国家知识产权局专利局受理处收
电子申请，应当通过电子专利申请系统以电子文件形式提交相关文件。除另有规定外，以纸件等其他形式提交的文件视为未提交。

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检索报告

02Q

申请号：2011100361241	申请日：20060630	首次检索
申请人：普瑞维克斯有限公司	最早的优先权日：20050630	
权利要求项数：36	说明书段数：149+4	
审查员确定的 IPC 分类号：G06F 21/00		
检索记录信息：CNKI,CNPAT,WPI,EPODOC: 恶意、分类、入侵、检测、监控、行为、对象、内容、malware、classif+、intrusion、detect、monitor、behavior、object、content		

相关专利文献

类型	国别以及代码[11]给出的文献号	代码[43]或[45]给出的日期	IPC 分类号	相关的段落和/或图号	涉及的权利要求
X	EP1549012A1	20050629	H04L29/06	说明书第 42-43 段、权利要求 1	1-11,13-23,25-35
Y	EP1549012A1	20050629			12,24,36
Y	US2005/0086500A1	20050421	H04L9/32	摘要、说明书第 8 段	12,24,36
A	EP1315066A1	20030528	G06F1/00	全文	1-36
A	US2003/0177394A1	20030918	G06F11/30	全文	1-36
A	US2004/0039921A1	20040226	G06F11/30	全文	1-36
A	US2004/0153644A1	20040805	G06F11/30	全文	1-36
A	US2005/0021994A1	20050127	G06F11/30	全文	1-36

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相关非专利文献					
类型	书名（包括版本号和卷号）	出版日期	作者姓名和出版者名称	相关页数	涉及的权利要求
类型	期刊或文摘名称（包括卷号和期号）	发行日期	作者姓名和文章标题	相关页数	涉及的权利要求

表格填写说明事项：

1. 审查员实际检索领域的 IPC 分类号应当填写到大组和 / 或小组所在的分类位置。
2. 期刊或其它定期出版物的名称可以使用符合一般公认的国际惯例的缩写名称。
3. 相关文件的类型说明：

X：一篇文件影响新颖性或创造性；

Y：与本报告中的另外的 Y 类文件组合而影响创造性；

A：背景技术文件；

R：任何单位或个人在申请日向专利局提交的、属于同样的发明创造的专利或专利申请文件。

P：中间文件，其公开日在申请的申请日与所要求的优先权日之间的文件；

E：抵触申请。

审 查 员：赵晓敏　　审查部门：专利审查协作北京中心电学发明审查部

2013 年 04 月 08 日

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UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/543,865	07/08/2012	Melvyn Morris	6890-93-DIV	8408

22442 7590 04/15/2013

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
ZECHER, CORDELIA P K	
ART UNIT	PAPER NUMBER
2432	

NOTIFICATION DATE	DELIVERY MODE
04/15/2013	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):

e-docket@sheridanross.com
srlaw@sheridanross.com

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Office Action Summary	Application No. 13/543,865	Applicant(s) MORRIS ET AL.	
	Examiner CORDELIA ZECHER	Art Unit 2432	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 *8 July 2012*.

☐ 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) *1-9* 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) *1-9* 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 *08 July 2012* 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. 11/477,807.

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.

Interim copies:

a)☐ All b)☐ Some c)☐ None of the: Interim copies of the priority documents have been 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: _____.

WBRT002935

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DETAILED ACTION

This action is responsive to the non-provisional application filed on July 8, 2012

Claims 1 – 9 are pending. Claims 1 and 4 are independent.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the abstract is directed to

the previous invention recited in the parent case. There is no mention of the aspects of

the present invention. Correction is required. See MPEP § 608.01(b).

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

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(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The disclosure is objected to because of the following informalities: The specification is not divided into the appropriate sections.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Appropriate correction is required.

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

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> 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.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 4, 5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahlstrom US Publication 2004/0006704 A1, and further in view of Beddoe US Patent 7,793,338 B1.

Referring to claims 1, 4 and 7, Dahlstrom discloses:

Receiving at a base computer details of all or selected security products operating at a point in time on said remote computer (paragraph 44)

Receiving similar information from other remote computers connected to the base computer (paragraph 29).

Identifying any vulnerabilities that were not identified by said other remote computers having that particular combination of security products (paragraphs 27, 46, and 48). Dahlstrom discloses that the vulnerability assessment includes a filtering/determination process wherein if any of the additional products eliminate the vulnerability then the vulnerability is not listed (paragraph 48). Therefore only vulnerabilities that have not been identified/remedied are listed.

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Dahlstrom does not explicitly disclose the identified vulnerabilities including malware. However, Beddoe discloses the vulnerability database includes viruses and Trojan horses (column 11, lines 13-15). Dahlstrom and Beddoe are analogous art because they are from the same field of endeavor, endpoint security. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Dahlstrom and Beddoe before him or her, to modify the vulnerability database of Dahlstrom to include the viruses and Trojan horses of Beddoe. The suggestion/motivation for doing so would have been so that a more comprehensive security assessment that takes into account a wider range of vulnerabilities can be performed (column 11, lines 16-19).

Referring to claims 2, 5, and 8, Dahlstrom discloses providing information to the user of said remote computer that said remote computer may be susceptible to attack by said malware processes on the basis of said identifying (paragraphs 38, 71 and 72).

Claims 3, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahlstrom in view of Beddoe as applied above, and further in view of Mateev US Publication 2003/0101381 A1.

Dahlstrom discloses wherein the details of all or selected security products includes the name of the security products, versions, and information relevant to determine whether an actual vulnerability may exist for a product configuration (paragraphs 25, 26, and 40). Dahlstrom in view of Beddoe does not explicitly disclose the information to determine whether a vulnerability may exist including signature files.

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However, Mateev discloses that to determine whether a virus is present on a system, consulting a signature database (paragraph 83). Dahlstrom in view of Beddoe and Mateev are analogous art because they are from the same field of endeavor, security. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Dahlstrom in view of Beddoe and Mateev before him or her, to modify the database of Dahlstrom in view of Beddoe to include the signature files of Mateev. The suggestion/motivation for doing so would have been because anti-virus products only require a signature to identify a virus (Mateev, paragraph 19) and would help determine whether an actual vulnerability may exist for a product configuration (Dahlstrom, paragraph 40).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CORDELIA ZECHER whose telephone number is (571)272-7771. The examiner can normally be reached on Monday - Thursday 8:00 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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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.

/CORDELIA ZECHER/
Primary Examiner, Art Unit 2432

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Notice of References Cited	Application/Control No. 13/543,865	Applicant(s)/Patent Under Reexamination MORRIS ET AL.	
	Examiner CORDELIA ZECHER	Art Unit 2432	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2003/0101381 A1	05-2003	Mateev et al.	714/38
*	B	US-2004/0006704 A1	01-2004	Dahlstrom et al.	713/200
*	C	US-7,793,338 B1	09-2010	Beddoe et al.	726/3
	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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2432
Melvyn Morris	)	Confirmation No.: 7855
Serial No.: 13/543,866	)	Examiner: Cordelia P.K. Zecher
Filed: July 8, 2012	)	SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6890-93-CON	)	
Entitled: "Methods and Apparatus for Dealing With Malware"	)	*Electronically Submitted*

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

Dear Commissioner:

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

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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 charge such fee to Deposit Account 19-1970.
☒	**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). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☒ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	**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. Please charge Deposit Account 19-1970 in the amount of $180.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

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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,

SHERIDAN ROSS P.C.

By: /Brent R. Lindon/
Brent R. Lindon
Registration No. 67424
1560 Broadway, Suite 1200
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(303) 863-9700

Date: June 20, 2013

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: Melvyn Morris	Group Art Unit: 2432
Application No.: 13/543,866	Examiner: Zecher, Cordelia PK
Filed: July 08, 2012	Confirmation No.: 7855
Atty. File No.: 6890-93-CON	
For: Methods and Apparatus for Dealing with Malware	

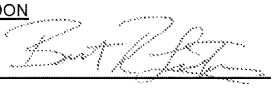
CERTIFICATE OF TRANSMISSION

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING TRANSMITTED VIA THE U.S. PATENT AND TRADEMARK OFFICE ELECTRONIC FILING SYSTEM (EFS-WEB) ON

JUNE 24, 2013

SHERIDAN ROSS P.C.

BY: BRENT R. LINDON

SIGNATURE: 

AMENDMENT AND RESPONSE

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

Commissioner:

Applicant submits this Amendment and Response to address the Office Action having a mailing date of March 22, 2013. Although Applicant believes that no additional fees are due in connection with filing this Amendment and Response, please credit any overpayment or charge any underpayment to Deposit Account No. 19-1970.

Please amend the above-identified patent application as follows:

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

Amendments to the Drawings being on page 8 of this paper.

Remarks begin on page 9 of this paper.

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Amendments to the Claims:

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

Listing of Claims:

1. (Currently Amended) A method of classifying a computer object as malware, the method comprising:

at a base computer, receiving data about a computer object from each of plural remote computers on which the object or similar objects are stored, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the respective remote computers, said information including at least the ~~identify~~ identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed;

storing at the base computer said data received from plural remote computers;

comparing in the base computer the data about the computer object received from the plural computers to identify relationships between the object and other objects or entities; and~~,~~

classifying the computer object as malware on the basis of said comparison.

2. (Previously Presented) A method according to claim 1, wherein the relationship is between objects related directly, or between objects related via other objects.

3. (Previously Presented) A method according to claim 1, wherein where an object and other objects are found to have a relationship, monitoring those related objects as a homogenous entity.

4. (Previously Presented) A method according to claim 1, comprising deducing an object to be malware based on the behaviour of a related object.

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5. (Previously Presented) A method according to claim 1, wherein if at least one other object to which said object is related is classed as malware, then classifying said object as malware.

6. (Previously Presented) A method according to claim 1, wherein said other objects include the object or similar objects stored on at least some of the remote computers.

7. (Previously Presented) A method according to claim 1, wherein said other objects include other objects that are parent objects or child objects or otherwise process-related objects to said object.

8. (Previously Presented) A method according to claim 1, wherein the data about the computer object that is sent from the plural remote computers to the base computer and that is used in the comparison includes one or more of: executable instructions contained within or constituted by the object;

the size of the object; the current name of the object;

the physical and folder location of the object on disk;

the original name of the object;

the creation and modification dates of the object;

vendor, product and version and any other information stored within the object; and,

the object header or header held by the remote computer.

9. (Previously Presented) A method according to claim 1, wherein the data is sent in the form of key that is obtained by a hashing process carried out in respect of the objects on the respective remote computers.

10. (Previously Presented) A method according to claim 9, wherein the key has at least one component that represents executable instructions contained within or constituted by the object.

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11. (Previously Presented) A method according to claim 9, wherein the key has at least one component that represents data about said object.

12. (Previously Presented) A method according to claim 11, wherein said data about said object includes at least one of:

the current name of the object;

the physical and folder location of the object on disk;

the original name of the object;

the creation and modification dates of the object;

vendor, product and version and any other information stored within the object;

the object header or header held by the remote computer; and,

events initiated by or involving the object when the object is created, configured or runs on the respective remote computers.

13. (Previously Presented) A method according to claim 9, wherein the key has at least one component that represents the physical size of the object.

14. (Previously Presented) A method according to claim 1, comprising initially classifying an object as not malware, generating a mask for said object that defines acceptable behaviour for the object, and comprising monitoring operation of the object on at least one of the remote computers and reclassifying the object as malware if the actual monitored behaviour extends beyond that permitted by the mask.

15. (Currently Amended) Apparatus for classifying a computer object as malware, the apparatus comprising:

a base computer constructed and arranged to receive data about a computer object from each of plural remote computers on which the object or similar objects are stored, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the respective remote computers, said information including at least the ~~identify~~ identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed;

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the base computer being constructed and arranged to compare the data about the computer object received from said plural computers to identify relationships between the object and other objects or entities; and,

the base computer being constructed and arranged to classify the computer object as malware on the basis of said comparison.

16. (Previously Presented) Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to identify the relationship between objects related directly, or between objects related via other objects.

17. (Previously Presented) Apparatus according to claim 15, wherein the base computer is constructed and arranged so as, where an object and other objects are found to have a relationship, to monitoring those related objects as a homogenous entity.

18. (Previously Presented) Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to deduce an object to be malware based on the behaviour of a related object.

19. (Previously Presented) Apparatus according to claim 15, wherein the base computer is constructed and arranged so that if at least one other object to which said object is related is classed as malware, then said object is classified as malware.

20. (Previously Presented) Apparatus according to claim 15, wherein the base computer is constructed and arranged so that said other objects include the object or similar objects stored on at least some of said remote computers.

21. (Previously Presented) Apparatus according to claim 15, wherein the base computer is constructed and arranged so that said other objects include other objects that are parent objects or child objects or otherwise process-related objects to said object.

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22. (Previously Presented) Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to compare the data where the data includes one or more of:

executable instructions contained within or constituted by the object;

the size of the object; the current name of the object;

the physical and folder location of the object on disk;

the original name of the object;

the creation and modification dates of the object;

vendor, product and version and any other information stored within the object; and,

the object header or header held by the remote computer.

23. (Previously Presented) Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to be able to process data that is sent in the form of key that is obtained by a hashing process carried out in respect of the objects on said respective remote computers.

24. (Previously Presented) Apparatus according to claim 23, wherein the key has at least one component that represents executable instructions contained within or constituted by the object.

25. (Previously Presented) Apparatus according to claim 23, wherein the key has at least one component that represents data about said object.

26. (Previously Presented) Apparatus according to claim 25, wherein said data about said object includes at least one of: the current name of the object;

the physical and folder location of the object on disk;

the original name of the object;

the creation and modification dates of the object;

vendor, product and version and any other information stored within the object;

the object header or header held by the remote computer; and,

events initiated by or involving the object when the object is created, configured or runs on the respective remote computers.

27. (Previously Presented) Apparatus according to claim 23, wherein the key has at least one component that represents the physical size of the object.

28. (Previously Presented) Apparatus according to claim 15, wherein the base computer is constructed and arranged to generate a mask for an object that is initially classed not as malware, said mask defining acceptable behaviour for the object, and the base computer is constructed and arranged to monitor operation of the object on at least one of the remote computers and to reclassify the object as malware if the actual monitored behaviour extends beyond that permitted by the mask.

29. (Previously Presented) A computer program recorded on non-transitory computer readable medium comprising program instructions for causing a computer to perform the method of claim 1.

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AMENDMENTS TO THE DRAWINGS

In response to the Office Action dated March 22, 2013, in connection with the above-identified patent application, enclosed for filing with said application are three sheets of formal drawings illustrating Figs. 1-4 of the application. Figs. 1-4 constitute all of the drawings in the application.

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REMARKS

Applicant respectfully requests reconsideration of this application as amended. Claims 1 and 15 have been amended, without intending to abandon or to dedicate to the public any patentable subject matter. Accordingly, claims 1-29 are currently pending.

Drawings

In response to the Office Action dated March 22, 2013, in connection with the above-identified patent application, enclosed for filing with said application are three sheets of formal drawings illustrating Figs. 1-4 of the application. Figs. 1-4 constitute all of the drawings in the application.

Specification

In response to the Office Action dated March 22, 2013, the Office Action correctly characterizes the arrangement specified in 37 C.F.R. 1.77(b) as "guidelines" of a "preferred" layout that is "suggested" for the Applicant's use. Thus, the Office Action itself acknowledges that the arrangement is discretionary on the part of the Applicant. In this case, Applicant declines the suggestion in the Office Action.

Claim Rejections Under 35 U.S.C. § 112

Claims 1 and 15 were 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. Claims 1 and 15 have been amended and therefore, are believed to overcome this rejection. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of the claims 1 and 15 be withdrawn.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-12, 15-26, and 29 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2006/0085857 A1 to Omote et al. (hereinafter "Omote") and further in view of U.S. Publication No. 2003/0177394 A1 to Dozortsev (hereinafter "Dozortsev"). Claims 13 and 27 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Omote in view of Dozortsev and further in view of U.S. Patent Publication

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No. 2005/0021994 A1 to Barton et al. (hereinafter "Barton"). Claims 14 and 28 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Omote in view of Dozortsev and further in view of U.S. Patent Publication No. 2005/0210035 A1 to Kester et al. (hereinafter "Kester"). When determining whether a claim is obvious under 35 U.S.C. § 103, an examiner must make "a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art." In re Ochiai, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added). Thus, "obviousness requires a suggestion of all limitations in a claim." CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing In re Royka, 490 F.2d 981, 985 (CCPA 1974) (holding that to establish prima facie obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art)). However, whether considered alone or in combination, the cited references do not disclose a method comprising: at a base computer, receiving data about a computer object from each of plural remote computers on which the object or similar objects are stored, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the respective remote computers, said information including at least the identify identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed; storing at the base computer said data received from plural remote computers; comparing in the base computer the data about the computer object received from the plural computers to identify relationships between the object and other objects or entities; and classifying the computer object as malware on the basis of said comparison as claimed. In particular, the cited references do not teach, suggest or describe at least comparing in the base computer the data about the computer object received from the plural computers to identify relationships between the object and other objects or entities. Accordingly, the rejections of the claims as anticipated by or obvious in view of the cited references should be reconsidered and withdrawn.

The Claimed Invention

The claimed invention generally relates to classifying a computer object as malware which includes receiving data about a computer object from each of plural remote computers on which the object or similar objects are stored; such data may be stored in a community database which provides an extensive corollary of an object's creation, configuration, execution, behavior,

identities, and relationships to other objects that either act upon it or are acted upon by it. The stored data may then be compared to identify relationships between the objet and other objects or entities. Based on this comparison, the computer object may be classified as malware.

The Omote Reference

The Omote reference is generally directed to generating process tree information and then using the process tree information for determining whether or not the process to be discriminated is an illegal process. *See e.g., Omote,* ¶ 0037, ¶ 0041. Specifically, "discrimination rule information based on the hierarchical relationship among processes is stored to designate common behavior to illegal processes so that it can be determined whether or not a process being operated in a computer is an illegal process by the activities of a virus." *See e.g., Omotoe, ¶ 0013.* That is, Omote makes no mention of at least comparing in the base computer the data about the computer object received from the plural computers and then classifying the computer object as malware on the basis of said comparison. Indeed, the Office states that "Omote does not explicitly disclose that the received information is for a plurality of remote computer." *See e.g, Office Action dated March 22, 2013,* page 6. Thus, the Office relies upon Dozortsev to teach this feature.

The Dozortsev Reference

The Dozortsev reference is generally directed to a central computer, including a database that is adapted to "store and analyze a plurality of executable code signatures, including signatures of malicious, legitimate, those executable codes identity of which is being investigated ant hose that have not been received for an investigation." *See e.g., Dozortsev*, Abstract. Specifically, "[u]pon detection of the occurrence of a potentially dangerous event, the monitoring software pinpoints the executable code responsible for it. Once the executable code is pinpointed, the monitoring application creates a unique suspect signature (using MD5 or another algorithm) for that module or a corresponding file and then transmits the suspect signature to the central computer." *See e.g., Dozortsev,* ¶ 0021. Additionally, paragraph [0045] of Dozortsev provides:

> If the signature doesn't match an entry in the local database, it is then forwarded for comparison to the central computer 165 and subsequent events are then identical to those described above with respect to the first working session with like numerals denoting like steps of FIG. 1. The analysis of the suspect signature includes comparison of the suspect

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> signature with the plurality of signatures stored in the database. If signatures match an entry in the database, subsequent steps will depend on how the signature is flagged. It must be appreciated that the types and the number of flags in the current invention can be more than described here. If the signature is flagged "new, executable code is not received" 52, the system will attempt to download the actual suspect executable code from the client computer to the central server. If the signature is flagged "received, under investigation" 54, the following message is forwarded to the client computer, "The executable code is being investigated" 56. If the signature is flagged "legitimate" 58, a corresponding message is sent to the client computer and the monitoring software on the client computer is commanded to allow the executable code in question to be executed and/or an event to proceed 60. If the signature is flagged "malicious" 62, the monitoring application receives a command to terminate the event 64. Event termination can be accomplished by terminating the process, but it can also be accomplished by a variety of temporary or permanent means. The system can also be configured to allow the end user to override the system's decision, for instance to allow a "malicious" executable code to operate.

See e.g., Dozortsev, ¶ 0021. That is, nowhere does Dozortsev teach at least comparing in the base computer the data about the computer object received from the plural computers to identify relationships between the object and other objects or entities. Instead, Dozortsev appears to be teaching merely matching signatures to determine if a suspect executable code is in the database on the central computer. There is no disclosure in Omotoe and Dozortsev, taken alone, or in any combination of at least storing at the base computer said data received from plural remote computers, comparing in the base computer the data about the computer object received from the plural computers to identify relationships between the object and other objects or entities; and classifying the computer object as malware on the basis of said comparison, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the respective remote computers, said information including at least the identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed. This is simply not taught or disclosed by any of the cited references.

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CONCLUSION

Accordingly, at least based on the above, the independent claim is patentably distinguishable from the cited reference. The dependent claims are further distinguishable at least based on the above and the additional feature(s) recited therein.

With all objections and rejections having been overcome, Applicants respectfully submit the application is in condition for allowance. Withdrawal of the outstanding rejection and a prompt notice of allowance are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the telephone number listed below.

The Commissioner is hereby authorized to charge to deposit account number 19-1970 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,

SHERIDAN ROSS P.C.

Date: June 24, 2013

By: /Brent R. Lindon/

Brent R. Lindon
Reg. No. 67.424
1560 Broadway, Suite 1200
Denver, Colorado 80202
Telephone: 303-863-9700

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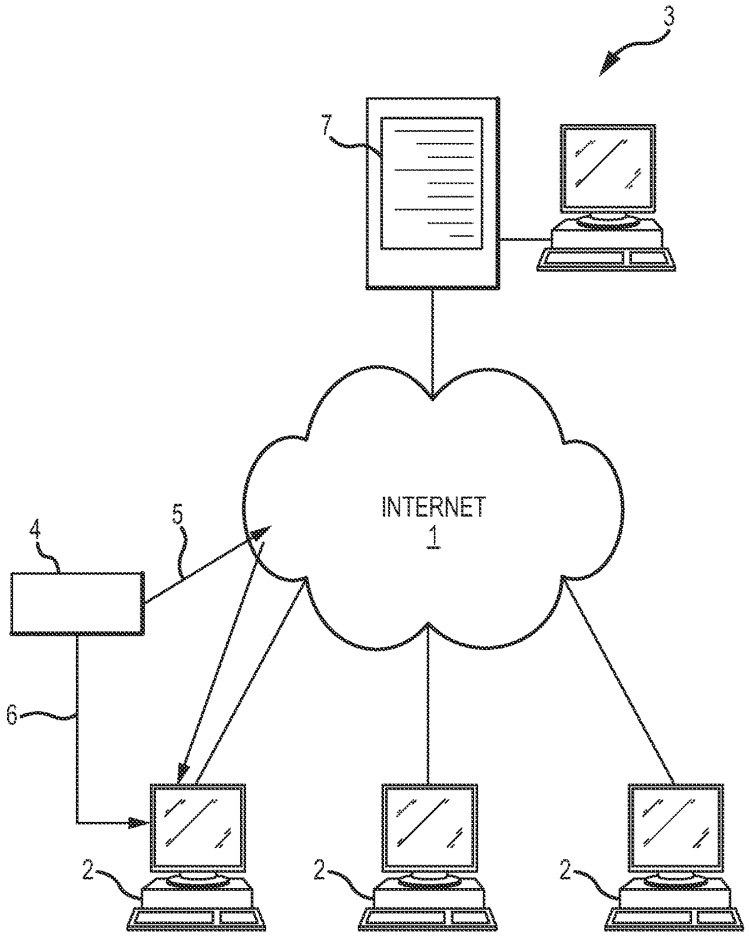


FIG.1

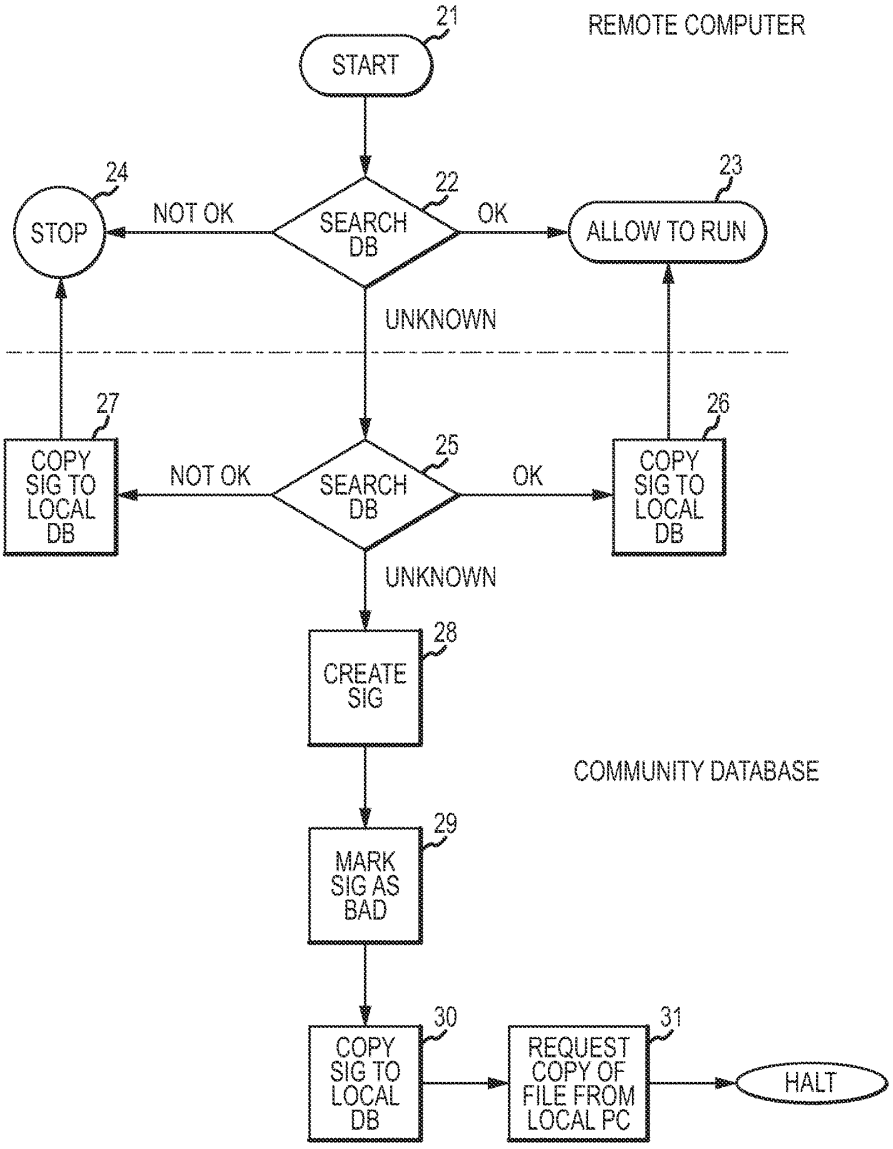

REMOTE COMPUTER
21
START
22
SEARCH DB
NOT OK
24
STOP
OK
23
ALLOW TO RUN
UNKNOWN
27
COPY SIG TO LOCAL DB
NOT OK
25
SEARCH DB
OK
26
COPY SIG TO LOCAL DB
UNKNOWN
28
CREATE SIG
COMMUNITY DATABASE
29
MARK SIG AS BAD
30
COPY SIG TO LOCAL DB
31
REQUEST COPY OF FILE FROM LOCAL PC
HALT

FIG.2

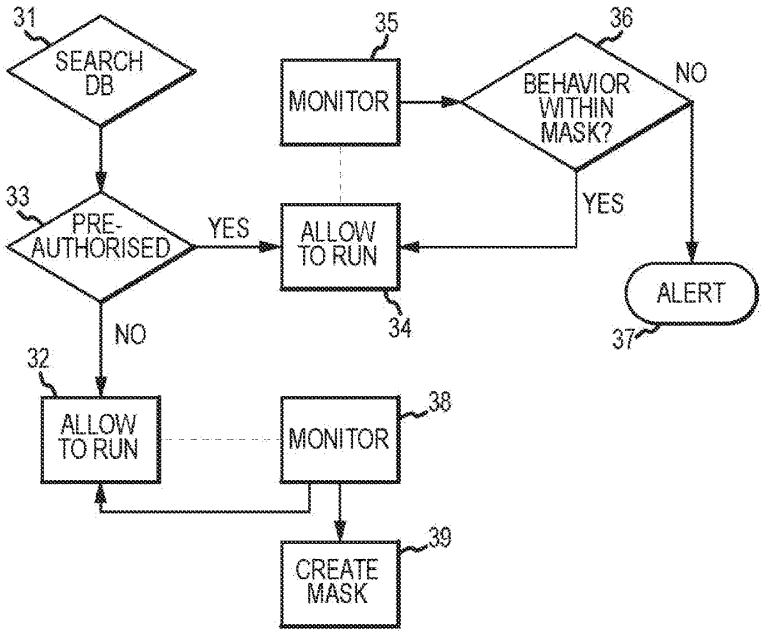

31
SEARCH DB
35
MONITOR
36
BEHAVIOR WITHIN MASK?
NO
YES
33
PRE-AUTHORISED
YES
ALLOW TO RUN
34
ALERT
37
NO
32
ALLOW TO RUN
MONITOR
38
CREATE MASK
39

FIG.3

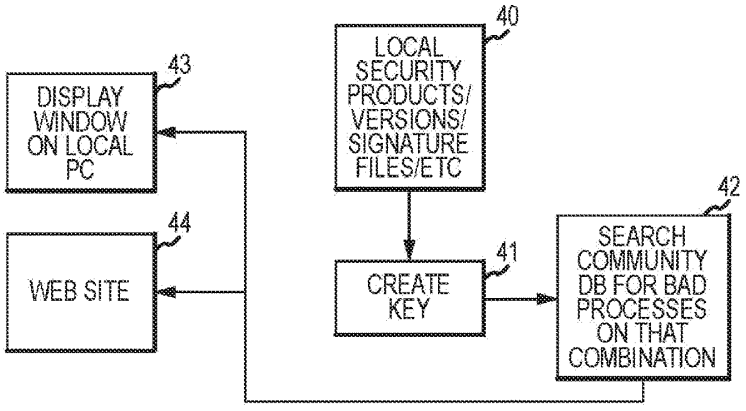

40
LOCAL SECURITY PRODUCTS/ VERSIONS/ SIGNATURE FILES/ETC
43
DISPLAY WINDOW ON LOCAL PC
42
SEARCH COMMUNITY DB FOR BAD PROCESSES ON THAT COMBINATION
44
WEB SITE
41
CREATE KEY

FIG.4

Electronic Acknowledgement Receipt	
EFS ID:	16140863
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Customer Number:	22442
Filer:	Brent Robert Lindon
Filer Authorized By:	
Attorney Docket Number:	6890-93-CON
Receipt Date:	25-JUN-2013
Filing Date:	08-JUL-2012
Time Stamp:	01:59:07
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		AMEND_01.pdf	159114 f283b68359166c7659941a6a107d371e493035cd	yes	13

WBRT002962

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	6
	Drawings-only black and white line drawings	7	7
	Applicant Arguments/Remarks Made in an Amendment	8	13

Warnings:					
Information:					
2	Drawings-only black and white line drawings	FORMAL_FIGS.pdf	262130 103d7cbe07f455f662a25ddad5a3edfcb1d7b90c	no	3
Warnings:					
Information:					
		Total Files Size (in bytes):	421244		

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 (07-06)
Approved for use through 1/31/2007. 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	Filing Date	To be Mailed
13/543,866	07/08/2012	☐

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 06/25/2013

	(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 26	Minus	** 29	= 0	X $ =		OR	X $80=	0
Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $ =		OR	X $420=	0
☐ 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	0

AMENDMENT

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

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

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/POLIN ANG/

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.

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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/543,866	07/08/2012	Melvyn Morris	6890-93-CON	7855

22442 7590 07/08/2013

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
ZECHER, CORDELIA P K	
ART UNIT	PAPER NUMBER
2432	

NOTIFICATION DATE	DELIVERY MODE
07/08/2013	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):

e-docket@sheridanross.com
srlaw@sheridanross.com

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Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	13/543,866	MORRIS ET AL.	
	Examiner	Art Unit	
	CORDELIA ZECHER	2432	

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

(1) *CORDELIA ZECHER*. (3)_____.

(2) *Brent Linden*. (4)_____.

Date of Interview: *01 July 2013*.

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: *Omote, Dozortsev*.

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...)

Possible amendments to clarify the claims were discussed. Specifically clarifying that the pieces of information received from the remote computers are associated to assisit in the determining of malware. Such amendments would require further search and consideration.

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

/CORDELIA ZECHER/ Primary Examiner, Art Unit 2432	

WBRT002966

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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.

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/543,866	07/08/2012	Melvyn Morris	6890-93-CON	7855

22442 7590 07/12/2013

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
ZECHER, CORDELIA P K	
ART UNIT	PAPER NUMBER
2432	

NOTIFICATION DATE	DELIVERY MODE
07/12/2013	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):

e-docket@sheridanross.com
srlaw@sheridanross.com

WBRT002968

IPR2023-00633
Open Text Inc. EX-2018 - 171

Office Action Summary	Application No. 13/543,866	Applicant(s) MORRIS ET AL.	
	Examiner CORDELIA ZECHER	Art Unit 2432	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 *25 June 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) *1-29* 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) *1-29* 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 *25 June 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: _____.

WBRT002969

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DETAILED ACTION

Response to Arguments

Applicant's arguments, see Remarks, filed June 25, 2013, with respect to the specification and drawings have been fully considered and are persuasive. The objection to the specification and drawings has been withdrawn.

Applicant's arguments with respect to 112 have been fully considered and are persuasive. The 112 rejection of claims 1 – 29 has been withdrawn.

Applicant's arguments with respect to the 103 rejection have been fully considered but they are not persuasive.

Applicant argues that Dozortsev does not teach or suggest comparing in the base computer data about the computer objects received from the plural remote computers to identify relationships between the object and other objects or entities. The examiner disagrees. The examiner finds that Dozortsev teaches comparing the received signature with the stored signature to determine if there is a match (paragraph 36, Figure 1, #50). This comparison is determining a relationship between the received signature and the stored signature.

Applicant argues that there is no disclosure in Omotoe and Dozortsev, taken alone, or in any combination of at least storing at the base computer said data received from plural remote computers, comparing in the base computer the data about the computer object received from the plural computers to identify relationships between the object and other objects or entities; and classifying the computer object as malware on the basis of said comparison, wherein said data includes information about events

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initiated or involving the object when the object is created, configured or runs on the respective remote computers, said information including at least the identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed.

The examiner disagrees. The examiner finds, as explained above, Dozortsev teaches at a central computer receiving and storing data received from plural remote computers, and comparing the data about the object received with the stored data to determine if there is a match (paragraphs 22 and 36), and classifying the process as malicious when a match is found (paragraph 36, Figure 1, #62). Omote discloses identifying malware using data about the object to classify it, such as the identity of the object, the event type, and the identity of the object or other entity on which the event is being performed (paragraphs 62-64). Therefore the combination of Omote and Dozortsev discloses the disputed claim limitations.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on June 20, 2013 was filed after the mailing date of the Non-Final Rejection on March 22, 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.

Drawings

The drawings were received on June 25, 2013. These drawings are acceptable.

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

Claims 1 – 12, 15 – 26, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omote US Publication 2006/0085857 A1, and further in view of Dozortsev US Publication 2003/0177394 A1.

Referring to claims 1, 15 and 29, Omote teaches:

Receiving data about a computer object, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the respective remote computers, said information including at least the identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed (paragraphs 39-42).

Storing at the base computer said data received (paragraph 42-43, and 51).

Comparing in the base computer the data about the computer object to identify relationships between the object and other objects or entities (paragraphs 41-42).

Classifying the computer object as malware on the basis of said comparison (paragraphs 63-64).

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Omote does not explicitly disclose that the received information is for a plurality of remote computer. However, Dozortsev discloses suspect signatures are forwarded on to the central computer (paragraphs 22 and 45). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the central computer of Dozortsev. The suggestion/motivation for doing so would have been so that the central computer in this way communicates to the client computer the experience of other client computers connected to the central computer (paragraph 52).

Referring to claims 2 and 16, Omote discloses the relationship is between objects related directly, or between objects related via other objects (paragraph 41).

Referring to claims 3 and 17, Omote discloses an object and other objects are found to have a relationship, monitoring those related objects as a homogenous entity (paragraph 63).

Referring to claims 4 and 18, Omote discloses deducing an object to be malware based on the behavior of a related object (paragraph 63).

Referring to claims 5 and 19, Omote discloses if at least one other object to which said object is related is classed as malware, then classifying said object as malware (paragraphs 78 and 79). In addition, Dozortsev teaches if the object is related to a malicious executable code then disabling the executable code (paragraph 25).

Referring to claims 6 and 20, Omote discloses said other objects include the object or similar objects stored on the computer (paragraph 42). Omote does not explicitly disclose that the received information is for a plurality of remote computer. However, Dozortsev discloses suspect signatures are forwarded on to the central computer (paragraphs 22 and 45). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the central computer of Dozortsev. The suggestion/motivation for doing so would have been so that the central computer in this way communicates to the client computer the experience of other client computers connected to the central computer (paragraph 52).

Referring to claims 7 and 21, Omote discloses said other objects include other objects that are parent objects or child objects or otherwise process-related objects to said object (paragraph 41 and 63).

Referring to claims 8 and 22, Omote teaches the data about the computer object that is used in the comparison includes the current name of the object (paragraph 40). Omote does not explicitly disclose that the received information is for a plurality of remote computer. However, Dozortsev discloses suspect signatures are forwarded on to the central computer (paragraphs 22 and 45). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the

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teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the central computer of Dozortsev. The suggestion/motivation for doing so would have been so that the central computer in this way communicates to the client computer the experience of other client computers connected to the central computer (paragraph 52).

Referring to claims 9 and 23, Dozortsev discloses the data is sent in the form of key that is obtained by a hashing process carried out in respect of the objects on the respective remote computers (paragraph 21). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the unique signature of Dozortsev. The suggestion/motivation for doing so would have been to have a unique signature of the executable code for comparison (paragraph 21).

Referring to claims 10 and 24, Dozortsev discloses the key has at least one component that represents executable instructions contained within or constituted by the object (paragraph 21). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the unique signature of Dozortsev. The suggestion/motivation for

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doing so would have been to have a unique signature of the executable code for comparison (paragraph 21).

Referring to claims 11 and 25, Dozortsev discloses the key has at least one component that represents data about said object (paragraph 21). Omote and Dozortsev are analogous art because they are from the same field of endeavor, virus detection. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Omote and Dozortsev before him or her, to modify the network virus activity detection system of Omote to include the unique signature of Dozortsev. The suggestion/motivation for doing so would have been to have a unique signature of the executable code for comparison (paragraph 21).

Referring to claims 12 and 26, Omote discloses said data about said object includes the current name of the object (paragraph 40).

Claims 13, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omote in view of Dozortsev as applied above, and further in view of Barton et al's US Publication 2005/0021994 A1.

Omote in view of Dozortsev discloses all the limitations of the parent claims. Omote in view of Dozortsev does not explicitly disclose the data about the object including the size of the object. However, Barton discloses indicating for the object the file name, size and location (pages 2-3, paragraph 39). Omote in view of Dozortsev and Barton are analogous art because they are from the same field of endeavor, malware detection. At the time of the invention, it would have been obvious to one of ordinary

skill in the art, having the teachings of Omote in view of Dozortsev and Barton before him or her, to modify the rules of Omote in view of Dozortsev to include the data size of Barton. The suggestion/motivation for doing so would have been the characteristics are strongly indicative of a particular file being one of the candidates (page 1, paragraph 14).

Claims 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omote in view of Dozortsev, as applied above, and further in view of Kester et al US Publication 2005/0210035 A1.

Omote in view of Dozortsev teaches all the limitations of the parent claim, and initially classifying an object as not malware, and changing the status of the object after an investigation (Dozortsev, paragraphs 37-41). Omote in view of Dozortsev does not explicitly disclose generating a mask for said object that defines acceptable behaviour for the object, and monitoring operation of the object on at least one of the remote computers and reclassifying the object as malware if the actual monitored behaviour extends beyond that permitted by the mask. However, Kester discloses determining access privileges for an application based on the expected network behavior of an application (paragraph 43), and then monitoring the behavior of an application based on access privileges(paragraphs 41, 55 and 56).

Omote in view of Dozortsev and Kester are from the same field of endeavor, malware. At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the investigation of Omote in view of Dozortsev to include the

privileges based on behavior of Kester. The suggestion for doing so would have been for the system to be able to keep or change a previous access privilege based on the subsequent activity of an application (paragraph 41).

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

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

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CORDELIA ZECHER whose telephone number is (571)272-7771. The examiner can normally be reached on Monday - Thursday 8:00 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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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.

/CORDELIA ZECHER/
Primary Examiner, Art Unit 2432

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13543866	MORRIS ET AL.
	Examiner	Art Unit
	CORDELIA ZECHER	2432

✓	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	03/14/2013	07/01/2013							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
	13	✓	✓							
	14	✓	✓							
	15	✓	✓							
	16	✓	✓							
	17	✓	✓							
	18	✓	✓							
	19	✓	✓							
	20	✓	✓							
	21	✓	✓							
	22	✓	✓							
	23	✓	✓							
	24	✓	✓							
	25	✓	✓							
	26	✓	✓							
	27	✓	✓							
	28	✓	✓							
	29	✓	✓							

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/543,866
				Filing Date	July 8, 2012
(Use as many sheets as necessary)				First Named Inventor	Melvyn Morris
				Art Unit	2432
				Examiner Name	Cordelia P.K. Zecher
Sheet	1	of	1	Attorney Docket Number	6890-93-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	7793338	09/07/2010	Beddoe 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.
	2	Official Action for China Patent Application No. 201110036124.1, dated Apr. 17, 2013, 7 pages
	3	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 13/543,865, mailed Apr. 15, 2013, 9 pages (Attorney's Ref. No. 6890-93-DIV)

Examiner Signature	/Cordelia Zecher/	Date Considered	07/01/2013

*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. Applicant's unique citation designation number (optional). See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. Enter Office that issued the document, by the two-letter code (WIPO Standard ST.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. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.Z./

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: Melvyn Morris	Group Art Unit: 2432
Application No.: 13/543,866	Examiner: Zecher, Cordelia PK
Filed: July 08, 2012	Confirmation No.: 7855
Atty. File No.: 6890-93-CON	
For: Methods and Apparatus for Dealing with Malware	

RESPONSE TO INTERVIEW SUMMARY

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

Commissioner:

Applicant would like to thank Examiner Zecher for her time during the telephonic interview on July 01, 2013. Examiner Zecher and Applicant's representative, Brent Lindon, discussed the current rejection to clarify the issues at hand, discussed possible additions to the claims, and differences between the cited art and the present claims. Specifically discussed was clarifying that the pieces of information received from the remote computers are associated to assist in the determining of malware; however, such amendments would require further search and consideration. Again, Applicant appreciates the Examiner's attention and assistance.

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: August 06, 2013

By: /Brent R. Lindon/
Brent R. Lindon
Reg. No. 67.424
1560 Broadway, Suite 1200
Denver, Colorado 80202
Telephone: 303-863-9700

WBRT002982

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Electronic Acknowledgement Receipt	
EFS ID:	16518087
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Customer Number:	22442
Filer:	Brent Robert Lindon/Kathy Johnston
Filer Authorized By:	Brent Robert Lindon
Attorney Docket Number:	6890-93-CON
Receipt Date:	06-AUG-2013
Filing Date:	08-JUL-2012
Time Stamp:	18:46:07
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	Miscellaneous Incoming Letter	Response_to_Interview_Summary.pdf	65360 7ac14ff6a050dbbdedb81cbc99c8b5b0a2a3d638	no	1
Warnings:					
Information:					

WBRT002983

Total Files Size (in bytes):	65360

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

PRIORITY DOCUMENT EXCHANGE

FAILURE STATUS REPORT

An attempt by the Office to electronically retrieve, under the Priority Document Exchange programs (PDX and DAS), 0513375.6 to which priority is claimed has FAILED on 10/04/2013.

For further questions or assistance, please contact our EBC Customer Support Center at

1-866-217-9197 (toll-free)

571-272-4100 (local)

M-F 6AM - Midnight (Eastern Time)

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. 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 contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	13543866	Filing Date	2012-07-08	Docket Number (if applicable)	6890-93-CON	Art Unit	2432
First Named Inventor	Melvyn Morris			Examiner Name	Zecher, Cordelia PK		

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
Petition for Extension of Time - 1 month

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 191970

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

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PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. 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 contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/Brent R. Lindon/	Date (YYYY-MM-DD)	2012-11-12
Name	Brent R. Lindon	Registration Number	67424

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

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 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.

WBRT002988

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Electronic Patent Application Fee Transmittal	
Application Number:	13543866
Filing Date:	08-Jul-2012
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Filer:	Brent Robert Lindon/Kathy Johnston
Attorney Docket Number:	6890-93-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:				
Claims in excess of 20	2202	1	40	40
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 $0 paid	2251	1	100	100
Miscellaneous:				
Request for Continued Examination	2801	1	600	600
		Total in USD ($)		**740**

Electronic Acknowledgement Receipt	
EFS ID:	17374041
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Customer Number:	22442
Filer:	Brent Robert Lindon
Filer Authorized By:	
Attorney Docket Number:	6890-93-CON
Receipt Date:	12-NOV-2013
Filing Date:	08-JUL-2012
Time Stamp:	16:11:46
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$740
RAM confirmation Number	3535
Deposit Account	191970
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

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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		AMEND_02.pdf	146209 6accf297c3141af26f0ba0dd8e17a16a6dc76655	yes	14
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment Submitted/Entered with Filing of CPA/RCE		1	1	
	Claims		2	8	
	Applicant Arguments/Remarks Made in an Amendment		9	14	
Warnings:					
Information:					
2	Extension of Time	sb0022_EOT_1mo.pdf	186997 a6295d5c9ae275e9a96256f1a7846a882a313752	no	2
Warnings:					
Information:					
3	Request for Continued Examination (RCE)	sb0030e_RCE.pdf	697541 fea6ee4fa7f6fb18e1f8e780e8e24d33804a4970	no	3
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	34127 80c594afc10f36b0bba785bc8cffe79d66a7e9a0	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1064874		

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: Melvyn Morris	Group Art Unit: 2432
Application No.: 13/543,866	Examiner: Zecher, Cordelia PK
Filed: July 08, 2012	Confirmation No.: 7855
Atty. File No.: 6890-93-CON	
For: Methods and Apparatus for Dealing with Malware	

AMENDMENT AND RESPONSE

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

Commissioner:

Applicant submits this Amendment and Response to address the Office Action having a mailing date of July 12, 2013. Submitted herewith is a Petition for a one month Extension of Time along with the requisite fee. Additionally, a Request for Continued Examination together with the required fees has been filed concurrently herewith. Additionally, payment in the amount for $40.00 for one additional dependent claim has been made concurrently herewith. Although Applicant believes that no additional fees are due in connection with filing this Amendment and Response, please credit any overpayment or charge any underpayment to Deposit Account No. 19-1970.

Please amend the above-identified patent application as follows:

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

Remarks begin on page 9 of this paper.

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Amendments to the Claims:

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

Listing of Claims:

1. (Currently Amended) A method of classifying a computer object as malware, the method comprising:

at a base computer, receiving data about a computer object from ~~each of plural~~ a first remote ~~computers~~ computer on which the object or similar objects are stored, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the ~~respective~~ first remote ~~computers~~computer, said information including at least the identity of ~~the~~ an object initiating the event, the event type, and ~~the~~ an identity of the object or other entity on which the event is being performed;

at the base computer, receiving data about the computer object from a second remote computer on which the object or similar objects are stored, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the second remote computer, said information including at least the identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed;

storing at the base computer said data received from ~~plural~~ the first and second remote computers;

correlating, by the base computer, at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer;

comparing, ~~in~~ by the base computer, the correlated data about the computer object received from the first and second ~~plural~~remote computers to ~~identify relationships between the object and~~ other objects or entities to identify relationships between the correlated data and the other objects or entities; and

classifying, by the base computer, the computer object as malware on the basis of said comparison.

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2. (Original) A method according to claim 1, wherein the relationship is between objects related directly, or between objects related via other objects.

3. (Currently Amended) A method according to claim 1, wherein where an object and other objects are found to have a relationship, monitoring those related objects as a homogenous entity and identifying a common object of the homogenous entity as a malware object.

4. (Original) A method according to claim 1, comprising deducing an object to be malware based on the behaviour of a related object.

5. (Original) A method according to claim 1, wherein if at least one other object to which said object is related is classed as malware, then classifying said object as malware.

6. (Currently Amended) A method according to claim 1, wherein said other objects include the object or similar objects stored on at least ~~some~~one of the first and second remote computers.

7. (Original) A method according to claim 1, wherein said other objects include other objects that are parent objects or child objects or otherwise process-related objects to said object.

8. (Currently Amended) A method according to claim 1, wherein the data about the computer object that is sent from the ~~plural~~respective remote ~~computers~~ computer to the base computer and that is used in the comparison includes one or more of:

executable instructions contained within or constituted by the object;

the size of the object; the current name of the object;

the physical and folder location of the object on disk;

the original name of the object;

the creation and modification dates of the object;

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vendor, product and version and any other information stored within the object; and,

the object header or header held by the respective remote computer.

9. (Currently Amended) A method according to claim 1, wherein the data is sent in the form of a key that is obtained by a hashing process carried out in respect of the objects on the respective remote ~~computers~~computer.

10. (Original) A method according to claim 9, wherein the key has at least one component that represents executable instructions contained within or constituted by the object.

11. (Original) A method according to claim 9, wherein the key has at least one component that represents data about said object.

12. (Currently Amended) A method according to claim 11, wherein said data about said object includes at least one of:

the current name of the object;

the physical and folder location of the object on disk;

the original name of the object;

the creation and modification dates of the object;

vendor, product and version and any other information stored within the object;

the object header or header held by the respective remote computer; and,

events initiated by or involving the object when the object is created, configured or runs on the respective remote computers.

13. (Original) A method according to claim 9, wherein the key has at least one component that represents the physical size of the object.

14. (Currently Amended) A method according to claim 1, comprising initially classifying an object as not malware, generating a mask for said object that defines acceptable behaviour for the object, ~~and comprising~~ monitoring an operation of the object on at least one of

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the first and second remote computers and reclassifying the object as malware if the actual monitored behaviour extends beyond that permitted by the mask.

15. (Currently Amended) Apparatus for classifying a computer object as malware, the apparatus comprising:

a base computer constructed and arranged to receive data about a computer object from ~~each of plural~~ a first remote ~~computers~~ computer on which the object or similar objects are stored, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the ~~respective~~ first remote ~~computers~~computer, said information including at least the identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed;

the base computer being constructed and arranged to receive data about the computer object from a second remote computer on which the object or similar objects are stored, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the second remote computer, said information including at least the identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed;

the base computer being constructed and arranged to correlate at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer;

the base computer being constructed and arranged to compare the data about the computer object received from ~~said plural~~the first and second remote computers to other objects or entities to identify relationships between the correlated data ~~object~~ and the other objects or entities; and

the base computer being constructed and arranged to classify the computer object as malware on the basis of said comparison.

16. (Original) Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to identify the relationship between objects related directly, or between objects related via other objects.

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17. (Currently Amended) Apparatus according to claim 15, wherein the base computer is constructed and arranged so as, where an object and other objects are found to have a relationship, to monitoring those related objects as a homogenous entity and identify a common object of the homogenous entity as a malware object.

18. (Original) Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to deduce an object to be malware based on the behaviour of a related object.

19. (Original) Apparatus according to claim 15, wherein the base computer is constructed and arranged so that if at least one other object to which said object is related is classed as malware, then said object is classified as malware.

20. (Currently Amended) Apparatus according to claim 15, wherein the base computer is constructed and arranged so that said other objects include the object or similar objects stored on at least ~~some~~ one of ~~said~~ the first and second remote computers.

21. (Original) Apparatus according to claim 15, wherein the base computer is constructed and arranged so that said other objects include other objects that are parent objects or child objects or otherwise process-related objects to said object.

22. (Currently Amended) Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to compare the data where the data includes one or more of:

executable instructions contained within or constituted by the object;
the size of the object; the current name of the object;
the physical and folder location of the object on disk;
the original name of the object;
the creation and modification dates of the object;
vendor, product and version and any other information stored within the object; and,
the object header or header held by the respective remote computer.

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23. (Currently Amended) Apparatus according to claim 15, wherein the base computer is constructed and arranged so as to be able to process data that is sent in the form of a key that is obtained by a hashing process carried out in respect of the objects on said respective remote ~~computers~~computer.

24. (Original) Apparatus according to claim 23, wherein the key has at least one component that represents executable instructions contained within or constituted by the object.

25. (Original) Apparatus according to claim 23, wherein the key has at least one component that represents data about said object.

26. (Currently Amended) Apparatus according to claim 25, wherein said data about said object includes at least one of:

the current name of the object;

the physical and folder location of the object on disk;

the original name of the object;

the creation and modification dates of the object;

vendor, product and version and any other information stored within the object;

the object header or header held by the respective remote computer; and[[,]]

events initiated by or involving the object when the object is created, configured or runs on the respective remote computers.

27. (Original) Apparatus according to claim 23, wherein the key has at least one component that represents the physical size of the object.

28. (Currently Amended) Apparatus according to claim 15, wherein the base computer is constructed and arranged to generate a mask for an object that is initially classed not as malware, said mask defining acceptable behaviour for the object, and the base computer is constructed and arranged to monitor an operation of the object on at least one of the first and

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second remote computers and to reclassify the object as malware if the actual monitored behaviour extends beyond that permitted by the mask.

29. (Original) A computer program recorded on non-transitory computer readable medium comprising program instructions for causing a computer to perform the method of claim 1.

30. (New) A method according to claim 1, wherein the data received about the computer object from the first remote computer is different than the data received about the computer object from the second remote computer.

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REMARKS

The above-identified patent application has been reviewed in light of the Examiner's Action dated July 12, 2013. Claims 1, 3, 6, 8, 9, 12, 14, 15, 17, 20, 22, 23, 26, and 28 have been amended, without intending to abandon or to dedicate to the public any patentable subject matter. Claim 30 has been added. Accordingly, claims 1-30 are now pending. As set forth herein, reconsideration and withdrawal of the rejections of the claims are respectfully requested.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-12, 15-26, and 29 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2006/0085857 A1 to Omote et al. (hereinafter "Omote") and further in view of U.S. Publication No. 2003/0177394 A1 to Dozortsev (hereinafter "Dozortsev"). Claims 13 and 27 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Omote in view of Dozortsev and further in view of U.S. Patent Publication No. 2005/0021994 A1 to Barton et al. (hereinafter "Barton"). Claims 14 and 28 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Omote in view of Dozortsev and further in view of U.S. Patent Publication No. 2005/0210035 A1 to Kester et al. (hereinafter "Kester"). To establish a *prima facie* case of obviousness, all claim limitations must first be taught or suggested by the prior art. *See, e.g., DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006); 80 U.S.P.Q.2d 1641, 1645 (2006). "All words in a claim must be considered in judging the patentability of that claim against the prior art." MPEP § 2143.03 (citing *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). The Examiner must then provide an explicit analysis of the motivation for combining the references. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007); 82 U.S.P.Q.2d 1385, 1396 (2007) ("a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art . . . ."). While the Examiner can choose one of several exemplary rationales from the MPEP to support an obviousness rejection, all the rationales in the MPEP still require the Examiner to demonstrate that all the claim elements are shown in the prior art. *See* MPEP § 2143, Original Eighth Edition, August 2001, Latest Revision July 2008. The Applicant respectfully submits that not all features of the claimed invention are taught or suggested by the cited references.

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In particular, whether considered alone or in combination, the cited references do not disclose a method comprising: at a base computer, receiving data about a computer object from a first remote computer on which the object or similar objects are stored, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the first remote computer, said information including at least the identity of an object initiating the event, the event type, and an identity of the object or other entity on which the event is being performed, at the base computer, receiving data about the computer object from a second remote computer on which the object or similar objects are stored, wherein said data includes information about events initiated or involving the object when the object is created, configured or runs on the second remote computer, said information including at least the identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed, storing at the base computer said data received from the first and second remote computers, correlating, by the base computer, at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer, comparing, by the base computer, the correlated data about the computer object received from the first and second remote computers to other objects or entities to identify relationships between the correlated data and the other objects or entities; an. In particular, the cited references do not teach, suggest or describe at least correlating, by the base computer, at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the same computer object received from the second remote computer and then comparing the correlated data about the computer object to identify relationships between the object and other objects or entities. Accordingly, the rejections of the claims as obvious in view of the cited references should be reconsidered and withdrawn.

The Claimed Invention

The claimed invention generally relates to classifying a computer object as malware utilizing a community database which provides an extensive corollary of an object's creation, configuration, execution, behavior, identities, and relationships to other objects that either act upon it or are acted upon by it. This relationship chain provides a series of correlation points, allowing ancestral relationships to be considered for any object and its predecessors by event or

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its issue. *See e.g., Applicant's specification-as-published,* ¶ 0102. The stored data may then be compared to identify relationships between the objet and other objects or entities. Based on this comparison, the computer object may be classified as malware.

The Omote Reference

The Omote reference is generally directed to a network virus activity detection system implemented in the client PC which generates process tree information and then uses this process tree information to determine whether or not the process to be discriminated is an illegal process. *See e.g., Omote,* ¶ 0037, ¶ 0038, ¶ 0041. Specifically, "discrimination rule information based on the hierarchical relationship among processes is stored to designate common behavior to illegal processes so that it can be determined whether or not a process being operated in a computer is an illegal process by the activities of a virus." *See e.g., Omote, ¶ 0013.* As Omote is generally directed to a system implemented on a PC, Omote makes no mention of at least receiving data about a computer object from a first remote computer and receiving data about the computer object from a second remote computer. Additionally, there is no suggestion in Omote where at least a portion of the data about the computer object from the first and second remote computers is correlated, the correlated data then being compared to other objects or entities to identify relationships. At least such a feature is not disclose or taught by Omote. Dozortsev does not teach that which Omote lacks.

The Dozortsev Reference

The Dozortsev reference is generally directed to a central computer, including a database that is adapted to "store and analyze a plurality of executable code signatures, including signatures of malicious, legitimate, those executable codes identity of which is being investigated ant hose that have not been received for an investigation." *See e.g., Dozortsev*, Abstract. Specifically, "[u]pon detection of the occurrence of a potentially dangerous event, the monitoring software pinpoints the executable code responsible for it. Once the executable code is pinpointed, the monitoring application creates a unique suspect signature (using MD5 or another algorithm) for that module or a corresponding file and then transmits the suspect signature to the central computer." *See e.g., Dozortsev,* ¶ 0021. Additionally, paragraph [0045] of Dozortsev provides:

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> If the signature doesn't match an entry in the local database, it is then forwarded for comparison to the central computer 165 and subsequent events are then identical to those described above with respect to the first working session with like numerals denoting like steps of FIG. 1. The analysis of the suspect signature includes comparison of the suspect signature with the plurality of signatures stored in the database. If signatures match an entry in the database, subsequent steps will depend on how the signature is flagged. It must be appreciated that the types and the number of flags in the current invention can be more than described here. If the signature is flagged "new, executable code is not received" 52, the system will attempt to download the actual suspect executable code from the client computer to the central server. If the signature is flagged "received, under investigation" 54, the following message is forwarded to the client computer, "The executable code is being investigated" 56. If the signature is flagged "legitimate" 58, a corresponding message is sent to the client computer and the monitoring software on the client computer is commanded to allow the executable code in question to be executed and/or an event to proceed 60. If the signature is flagged "malicious" 62, the monitoring application receives a command to terminate the event 64. Event termination can be accomplished by terminating the process, but it can also be accomplished by a variety of temporary or permanent means. The system can also be configured to allow the end user to override the system's decision, for instance to allow a "malicious" executable code to operate.

See e.g., Dozortsev, ¶ 0021. That is, Dozortsev teaches sending signatures to a system where the signatures may or may not be matched to other signatures residing on the system. Nowhere does Dozortsev teach at least receiving data about a computer object from a first remote computer and receiving data about the computer object from a second remote computer. Additionally, there is no suggestion in Dozortsev where at least a portion of the data about the computer object from the first and second remote computers is correlated, the correlated data then being compared to other objects or entities to identify relationships. Instead, Dozortsev appears to be teaching merely matching signatures to determine if a suspect executable code is in the database on the central computer. Omote and Dozortsev, taken alone, or in any combination, do not teach or suggest at least correlating, by the base computer, at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer; and comparing, by the base computer, the correlated data about the computer object received from the first and second remote computers to other objects or entities to identify relationships between the correlated data and the other objects or entities. This is simply not taught or disclosed by any of the cited references.

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Accordingly, at least based on the above, the independent claim is patentably distinguishable from the cited reference. The dependent claims are further distinguishable at least based on the above and the additional feature(s) recited therein. Therefore, Applicant respectfully submits that the rejections of claims 1-29 should be reconsidered and withdrawn.

Independently allowable dependent claims

In addition to depending from allowable independent claims, the dependent claims provide additional and independent reasons for allowance. For instance, dependent claim 30 requires that the data received about the computer object from the first remote computer is different than the data received about the computer object from the second remote computer. That is, the received data concerns the same object, however, the feature claimed requires that the received data is different. Nowhere is at least this feature taught or disclosed in the cited references.

As another example, dependent claims 3 and 17 require that where an object and other objects are found to have a relationship, monitoring those related objects as a homogenous entity and identifying a common object of the homogenous entity as a malware object. Indeed, ¶ 0065 of Omote teaches that by comparing the process designation result with the process log 19, the contents of the parent process of the process to be discriminated 2X are designated, and it is determined whether or not the process of the process to be discriminated 2X is an illegal process under the service of the parent process and the grandpa process based on the illegal rule file 18. *See e.g., Omote,* ¶ 0065. However, there is no teaching relating to identifying a common object of the homogenous entity as a malware object. Accordingly, at least the rejection of claims 3 and 17 should be reconsidered and withdrawn.

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CONCLUSION

The application now appearing to be in form for allowance, early notification of same 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.

The Examiner is invited to contact the undersigned by telephone if doing so would be of assistance.

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: November 12, 2013

By: /Brent R. Lindon/

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PTO/SB/22 (03-13)
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)

Docket Number (Optional): 6890-93-CON

Application Number: 13/543,866
Filed: 2012-07-08

For: METHODS AND APPARATUS FOR DEALING WITH MALWARE

Art Unit: 2432
Examiner: ZECHER, CORDELIA PK

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	$ 100.00
☐ 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 191970.

☑ 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 67424.

☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.

/Brent R. Lindon/ — Signature
November 12, 2013 — Date
Brent R. Lindon — Typed or printed name
303-863-9700 — 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 _____ 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.**

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

WBRT003008

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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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 13/543,866	Filing Date 07/08/2012	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)			
FOR	NUMBER FILED	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

	(Column 1)		(Column 2)	(Column 3)		
AMENDMENT	11/12/2013	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 29	= 1	X $40 =	40
	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	**40**

	(Column 1)		(Column 2)	(Column 3)		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	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
/PARTHENIA D. MERRILL/

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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WBRT003010

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
				Art Unit	2431
				Examiner Name	Trang T. Doan
Sheet	1	of	1	Attorney Docket Number	6890-93-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	2002/0194490	12/19/2002	Halperin et al.	
	2	2003/0131256	07/10/2003	Ackroyd	
	3	2003/0195861	10/16/2003	McClure 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.
	4	Official Action for European Patent Application No. 06755686.0 dated Jul. 31, 2013, 5 pages.
	5	EXAMINER ARBUTINA, Extended European Search Report for European Patent Application No. 13167434.3 dated Aug. 1, 2013, 6 pages.
	6	EXAMINER ARBUTINA, Extended European Search Report for European Patent Application No. 13167436.8 dated Aug. 30, 2013, 5 pages.
	7	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 13/543,865, mailed Aug. 6, 2013, 11 pages (Attorney's Ref. No. 6890-93-DIV)

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.

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Electronic Acknowledgement Receipt	
EFS ID:	17527672
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Customer Number:	22442
Filer:	Brent Robert Lindon/David Voegtle
Filer Authorized By:	Brent Robert Lindon
Attorney Docket Number:	6890-93-CON
Receipt Date:	27-NOV-2013
Filing Date:	08-JUL-2012
Time Stamp:	17:48:56
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	Non Patent Literature	EP06755686_OA_07-31-2013.pdf	113825 1c0efaf95e729649fedbd47b7598a91c717ab47a	no	5
Warnings:					
Information:					

WBRT003012

2	Non Patent Literature	EP13167434_EESR_08-01-2013.pdf	161055 4c4040a4cf0a728e1906460c9c965c73f15e6bc8	no	6
Warnings:					
Information:					
3	Non Patent Literature	EP13167436_EESR_08-30-2013.pdf	148651 baeedf49f38a1cd156f1797ed3e1cc59de623744	no	5
Warnings:					
Information:					
4	Non Patent Literature	6890-93-DIV_OA_08-06-2013.pdf	371702 66282c60f4fa89badc4a22f80898b9e1aecf47bb	no	11
Warnings:					
Information:					
5		IDS_03.pdf	371800 91dfc1ac17a4534adf6ae1444fc2ecd35af6619a	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:	
Total Files Size (in bytes):	1167033

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

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

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

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

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31 JUL 2013

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Substantive Examiner
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Tel: +31 70 340 - 2522

ENTERED
E
30.11.13

Application No.	Ref.	Date
06 755 686.0 - 1957	AF/P10717EP-W	31.07.2013
Applicant Prevx Ltd.		

Communication pursuant to Article 94(3) EPC

The examination of the above-identified application has revealed that it does not meet the requirements of the European Patent Convention for the reasons enclosed herewith. If the deficiencies indicated are not rectified the application may be refused pursuant to Article 97(2) EPC.

You are invited to file your observations and insofar as the deficiencies are such as to be rectifiable, to correct the indicated deficiencies within a period

of 4 months

from the notification of this communication, this period being computed in accordance with Rules 126(2) and 131(2) and (4) EPC. One set of amendments to the description, claims and drawings is to be filed within the said period on separate sheets (R. 50(1) EPC).

If filing amendments, you must identify them and indicate the basis for them in the application as filed. Failure to meet either requirement may lead to a communication from the Examining Division requesting that you correct this deficiency (R. 137(4) EPC).

Failure to comply with this invitation in due time will result in the application being deemed to be withdrawn (Art. 94(4) EPC).

Registered letter
EPO Form 2001 12.10CSX

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Arbutina, Ljiljana
Primary Examiner
For the Examining Division

Enclosure(s): 3 page/s reasons (Form 2906)

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The examination is being carried out on the **following application documents**

Description, Pages

1, 2, 4, 17-46	as originally filed	
3	filed with entry into the regional phase before the EPO	
5-10	filed in electronic form on	28-11-2011

Claims, Numbers

1-22	filed in electronic form on	28-11-2011

Drawings, Sheets

1/3-3/3	as originally filed

1.0. Reference is made to the following document; the numbering will be adhered to in the rest of the procedure:

D2 US 2004/153644 A1 (MCCORKENDALE BRUCE ET AL) 5 August 2004 (2004-08-05)

Clarity

2.0. The application does not meet the requirements of Article 84 EPC, because claims 1 and 12 are not clear, for the following reasons:

2.1. It is not clear how to read the characterizing portion of the claims in combination with the preamble.

One way of reading the claims is: initially classifying an object as not malware (lines 13-14 of claim 1), followed by a conditional reclassification of the object as a malware (lines 18-20 of claim 1), followed by unconditional classification of the object as malware (lines 11-12 of claim 1).

Another way of reading the claims is: initially classifying an object as not malware (lines 13-14 of claim 1), whereby the behaviour monitoring part (lines 14-20 of claim 1) further clarifies the comparing and classifying steps of the preamble (lines 8-12 of claim 1).

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The examiner could not identify an embodiment in the description which could help in solving this issue. Therefore, it would appear that the claims are not consistent with the description, contrary to requirements of Art.84 EPC.

2.2. The preamble of claims is not clear. It would appear from the last feature of the preamble ("classifying the computer object as malware on the basis of said comparison") that the object is always classified as malware. Therefore, it is unclear what are the limitations on the scope imposed by the features related to receiving and comparing the data about a computer object.

2.3. The term "similar object" is unclear. A skilled person does not have means to determine if a given object is similar to the object being classified, or not.

Patentability

3.0. Due to clarity issues, it is difficult to determine the scope defined by features of independent claims, therefore a complete reasoning concerning novelty/inventive step cannot be given at this stage. However, from the applicant's letter of reply, page 2, 3rd paragraph, it would appear that the invention lies in the capacity of changing the classification of an object if malevolent behaviour emerges later on. It is noted that this feature is present in D2, which discloses changing the classification of an object, see D2, par.[49], using behaviour mask, see D2, par.[50]. It is further noted that the initial classification of an object as "good" or "bad" is an administrative decision, and cannot be considered as having inventive contribution over the prior art. Therefore, it would appear that the subject-matter of claims 1 and 12 is not inventive over D2.

Miscellaneous

4.0. The applicant is invited to file his arguments and/or a new set of claims, taking into account the objections and comments given here above. The applicant should also indicate in the letter of reply which are the distinctive technical features which make the claim novel and inventive and what is their technical contribution over the prior art. The applicant should note that the examining division intends to use the provision of Rule 137(3) EPC for reasons of procedural efficiency, whenever appropriate.

4.1. In order to facilitate the examination of the conformity of the amended application with the requirements of Article 123(2) EPC, the applicant is requested to clearly identify the amendments carried out, irrespective of whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based.

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The applicant should also indicate the embodiment of the description which corresponds to the subject-matter of independent claims.

4.2. When filing amended claims the applicant should at the same time bring the description into conformity with the amended claims. Care should be taken during revision, especially of the introductory portion and any statements of problem or advantage, not to add subject-matter which extends beyond the content of the application as originally filed (Article 123(2) EPC).

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JUL 2013
29

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For any questions about this communication:
Tel.:+31 (0)70 340 45 00

Bebbington, Nicholas Paul
Beck Greener
Fulwood House
12 Fulwood Place
London WC1V 6HR
ROYAUME UNI

Date: 01.08.13

Reference	Application No./Patent No.
NPB/P10717EP-2	13167434.3 - 1957 / 2629231

Applicant/Proprietor
Prevx Limited

Communication

The extended European search report is enclosed.

The extended European search report includes, pursuant to Rule 62 EPC, the European search report (R. 61 EPC) or the partial European search report/ declaration of no search (R. 63 EPC) and the European search opinion.

Copies of documents cited in the European search report are attached.

☑ 0 additional set(s) of copies of such documents is (are) enclosed as well.

The following have been approved:

☑ Abstract ☑ Title

☐ The Abstract was modified and the definitive text is attached to this communication.

The following figure(s) will be published together with the abstract: 1

Refund of search fee
If applicable under Article 9 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.

Should you wish to further prosecute this application in the examination phase, your attention is drawn to the provisions of Rule 70a EPC. An invitation to respond to the extended European search report will be issued once the date of publication of the European search report has been mentioned in the European Patent Bulletin (R. 69(1), R. 70(2) EPC).

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EPO Form 1507N 06.12

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The examination is being carried out on the **following application documents**

Description, Pages

1-43 as originally filed

Claims, Numbers

1-15 as originally filed

Drawings, Sheets

1/3-3/3 as originally filed

Reference is made to the following document; the numbering will be adhered to in the rest of the procedure.

D1 US 2002/194490 A1 (HALPERIN AVNER [IL] ET AL) 19 December 2002 (2002-12-19)

1.0. The present application introduces subject-matter which extends beyond the content of the earlier application as filed, contrary to Article 76(1)EPC. The features concerned are the following:

1.1. Claims 1 and 14, the feature "said information including at least the identity of the object initiating the event, the event type, and the identity of the object or other entity on which the event is being performed".

The applicant identified page 24, line 32 to page 25, line 8, and page 29, line 9 to page 30 as basis for this feature.

First, it should be noted that the cited feature further defines the data sent from the remote computers to the base computer. Page 24, line 32 to page 25, line 8 relates to *analysis* of the data in the database. It does not disclose *how* this data is collected from remote computers. Moreover, the passage does not appear to disclose the above cited amendment. Page 29, line 9 to page 30 discloses *types* of captured meta data, not *how* this data is collected from remote computers. Moreover, the definition of an "event" discloses that *the event* has as a component "*the key* of the object..." (page 29, lines 11-12 and line 13), not *identity* of the object, as disclosed in the above cited

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feature. It is further to be noted that, according to the description, page 21, lines 10-32, *the key* of an object has *an event* as a component, which makes unclear the meaning of the event as disclosed on page 29.

1.2. Claims 1 and 14, the feature "comparing in the base computer the data about the computer object ... to identify relationships between the object and other objects or entities".

The applicant identified page 25, line 8 to page 26, line 26, and page 31, lines 5 to 29 as basis for this feature.

Page 25, line 8 to page 26, line 26 discloses use of an object's relationship to other objects in a heuristic process. It does not disclose, as claimed, "comparing ... the data about the computer object ... to identify relationship between the object...".

For completeness, it is noted that originally field claim 2 discloses identifying relationships between the object and other objects, but not other entities.

1.3. The additional feature of claim 2: "identifying the relationship between the objects related directly, or between objects related via other objects" does not appear to correspond to disclosure of page 25, lines 20-22.

1.4. The additional feature of claim 3: "where an object and other objects are found to have a relationship, monitoring those related objects as a homogenous entity" does not appear to correspond to disclosure of page 31, lines 19-29.

1.5. The additional feature of claim 4: "deducing an object to be malware based on behaviour of a related object" does not appear to correspond to disclosure of page 31, lines 19-29, or page 25, line 21 to page 26, line 7.

1.6. As a further argument, it is noted that the description on page 24, line 32 - page 31, line 29, parts of which are used for the additional limitations of independent and some of the dependent claims, does not appear to further specify a method of classifying a computer object as malware, which is the subject-matter of claim 1. As can be seen from the description, starting from page 23, line 18, this part of description relates to use of the data in the database for heuristic processes. The data in the database is collected in the context of allowing or denying a process to run on a remote computer, as can be seen from the description, page 18, line 3 - page 23, line 16. The original claim 1 does not appear to relate to this context. Therefore, the description on page 24, line 32 - page 31, line 29, cannot be used as further limitation of the original claim 1.

In conclusion, there is no disclosure in the parent application of a *method/apparatus of classifying a computer object as malware* that would correspond to the subject-matter of claims 1 and 14.

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2.0. The application does not meet the requirements of Article 84 EPC, because claims 1 and 14 are not clear, for the following reasons:

2.1. From the last feature of claims 1 and 14, it would appear that the object is always classified as malware. Therefore, it is unclear what limitations to the scope are imposed by other features of the claim.

2.2. The feature "comparing the the base computer the data about the computer object ... to identify relationships between the object and other objects" is unclear. It is unclear to how to translate the term "relationship between the objects" into technical features. The feature thus is drafted in terms of results to be achieved, the results being unclear.

2.3. If the last two features should be interpreted in the sense that the identified relationship between the objects is used to decide if the object is a malware or not, then there is a lack of sufficiency of disclosure (Art.83 EPC) over the whole range claimed, since there are various types or relationship between the objects for which it is not evident how to take this decision.

3.0. Due to added subject-matter and clarity issues, the claims cannot be assessed for novelty/inventive step. However, it is noted that document D1 appears to be very relevant for the claimed subject-matter, since it discloses collecting data related to software activity (events) from plurality of clients, and correlating this data on the server in order to detect malicious software (see D1, par.[86] to [106]).

3.1. In addition, it is noted that claims are not compliant with requirements of Rules 43 (1) and (7) EPC.

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Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 13 16 7434

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2002/194490 A1 (HALPERIN AVNER [IL] ET AL) 19 December 2002 (2002-12-19) * page 5, paragraph 86 - paragraph 106 * -----	1-15	INV. G06F21/56
A	US 2003/177394 A1 (DOZORTSEV DMITRI [US] DOZORTSEV D MITRI [US]) 18 September 2003 (2003-09-18) * paragraph [0034] - paragraph [0043] * -----	1-15	

TECHNICAL FIELDS SEARCHED (IPC)

G06F
H04L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	24 July 2013	Arbutina, Ljiljana

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

1

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 13 16 7434

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

24-07-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002194490 A1	19-12-2002	NONE	
US 2003177394 A1	18-09-2003	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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Open Text Inc. EX-2018 - 227

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NETHERLANDS
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Bebbington, Nicholas Paul
Beck Greener
Fulwood House
12 Fulwood Place
London WC1V 6HR
ROYAUME UNI

For any questions about this communication:
Tel.:+31 (0)70 340 45 00

Date: 30.08.13

Reference	Application No./Patent No.
NPB/P10717EP-1	13167436.8 - 1957 / 2629232

Applicant/Proprietor: Prevx Limited

Communication

The extended European search report is enclosed.

The extended European search report includes, pursuant to Rule 62 EPC, the European search report (R. 61 EPC) or the partial European search report/ declaration of no search (R. 63 EPC) and the European search opinion.

Copies of documents cited in the European search report are attached.

☑ 0 additional set(s) of copies of such documents is (are) enclosed as well.

The following have been approved:

☑ Abstract ☑ Title

☐ The Abstract was modified and the definitive text is attached to this communication.

The following figure(s) will be published together with the abstract: 1

Refund of search fee
If applicable under Article 9 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.

Should you wish to further prosecute this application in the examination phase, your attention is drawn to the provisions of Rule 70a EPC. An invitation to respond to the extended European search report will be issued once the date of publication of the European search report has been mentioned in the European Patent Bulletin (R. 69(1), R. 70(2) EPC).

Europäisches Patentamt • European Patent Office • Office européen des brevets

WBRT003025

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The examination is being carried out on the **following application documents**

Description, Pages

1-43 as originally filed

Claims, Numbers

1-7 as originally filed

Drawings, Sheets

1/3-3/3 as originally filed

Reference is made to the following document; the numbering will be adhered to in the rest of the procedure.

D1 US 2003/131256 A1 (ACKROYD ROBERT JOHN [GB]) 10 July 2003 (2003-07-10)

1.0. The application does not meet the requirements of Article 83 EPC, because the invention is not disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, for the following reason:

The last feature of claims 1 and 4, namely, the step of "identifying any malware processes that were not identified by said other remote computers having that particular combination of security products" is defined in terms of results to be achieved. It is not evident for a skilled person how to implement this step, and the documents of the application as filed do not indicate any way of doing it.

The claimed invention is described at page 28, line 28 to page 30, line 28. The description recites, page 30, lines 4-8, "if for example the database knows that a computer in the past has version A of anti-virus product B ..., but that a particular malware process P was not detected by this combination", and, further on, lines 23-24, "the database ... is searched for events for processes marked as "bad" that occurred on computers with that particular mix of security products and that were not locally detected", which amounts to the statement of the same result to be achieved.

Since the application does not indicate any way which would enable a skilled person to implement this step without inventive effort, it is considered that it does not fulfill the requirements of Art.83 EPC.

WBRT003026

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2.0. The application does not meet the requirements of Article 84 EPC, because claims 1 and 4 are not clear, as follows:

2.1. The terms "security products", "selected security products" and "similar information" used in claims 1 and 4 are not clear. A skilled person does not have means to distinguish if a certain product, or a certain information, falls under the claimed scope.

2.2. It is not clear to what refers "that particular combination" in the last feature of claims 1 an 4.

2.3. Claims 1 and 4 appear to be missing essential technical features. The claim does not define how, and if at all, the remote computers are identifying malware processes. Therefore, it is not clear how the information about malware processes not identified by such computers (even if this information could be provided, see par.1.0. here above), could contribute to solution of the problem of determining the protection from malware on one remote computer.

3.0. Due to issues regarding Art. 83 and 84 EPC, the claims cannot be assessed for novelty/inventive step. However, it is noted that document D1 appears to be very relevant for the present invention, since it discloses a system for monitoring and enforcing security settings on the computers within a computer network, using information about malware scanning products and malware detection on the client computers, the information being received and analyzed on the central server, see in particular par.[24] to par.[30] of D1.

3.1. In addition, it is noted that claims are not compliant with requirements of Rules 43 (1) and (7) EPC.

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Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 13 16 7436

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2003/131256 A1 (ACKROYD ROBERT JOHN [GB]) 10 July 2003 (2003-07-10) * page 2, paragraph 24 - paragraph 30 * -----	1-7	INV. G06F21/56 G06F21/57

TECHNICAL FIELDS SEARCHED (IPC)

G06F
H04L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	25 July 2013	Arbutina, Ljiljana

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

1

EPO FORM 1503 03.82 (P04C01)

WBRT003028

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 13 16 7436

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-07-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003131256 A1	10-07-2003	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/543,865	07/08/2012	Melvyn Morris	6890-93-DIV	8408

22442 7590 08/06/2013

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
ZECHER, CORDELIA P K	
ART UNIT	PAPER NUMBER
2432	

NOTIFICATION DATE	DELIVERY MODE
08/06/2013	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):

e-docket@sheridanross.com

WBRT003030

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Office Action Summary	Application No. 13/543,865	Applicant(s) MORRIS ET AL.	
	Examiner CORDELIA ZECHER	Art Unit 2432	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 *15 July 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) *1-13* 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) *1-13* 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 _____ 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: _____.

WBRT003031

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DETAILED ACTION

Response to Arguments

Applicant's arguments, see Remarks, filed July 15, 2013, with respect to the specification and abstract have been fully considered and are persuasive. The objection to the specification and abstract has been withdrawn.

Applicant's arguments with respect to the 103 rejection have been fully considered but they are not persuasive.

Applicant argues that Dahlstrom does not disclose or teach where the security vulnerabilities are identified based on a combination of security products not identifying the security vulnerability. However, as explained in applicant's response, Dahlstrom discloses filtering the list of vulnerabilities based on what vulnerabilities may be resolved by other products (paragraph 48). For example, if a computer comprises products A and B, and product A is vulnerable to Trojan Horse 1 and Trojan Horse 2, and product B is only vulnerable to Trojan Horse 1 and resolves Trojan Horse 2, then the vulnerability list for the computer would only include Trojan Horse 1. Therefore the list of vulnerabilities would include the vulnerability to which the computer comprising products A and B is vulnerable. Therefore Dahlstrom discloses the disputed claim limitation.

Applicant argues neither Dahlstrom nor Beddoe teach at least identifying one or more of the other remote computers having a same or similar combination of security products as the combination of security products operating on the remote computer. However, Dahlstrom discloses when a match if found for a product in the database the vulnerabilities are determined for that product (paragraph 46). Therefore, when

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computer 1 has product A and then computer 2 is determined to also contain product A, then computer 2 is effectively identified as having the same product as computer 1. This product assessment is then used to determine which vulnerability to which product A is vulnerable.

In addition, Beddoe incorporates by reference US Application 10/050,675 which was published as US Publication 2003/0195861 A1 (hereinafter McClure) (column 10, lines 45-52). McClure discloses that after the vulnerability assessment of a system an active assessment of all the target computers takes place wherein the knowledge of target computer operating system, as well as information recovered from the target network during vulnerability assessment is used to further test vulnerabilities against each target computer (paragraphs 157 and 323-325). Therefore the combination of Dahlstrom and Beddoe disclose the disputed claim limitation.

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.

Claims 11 and 13 are 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.

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Claims 11 and 13 recite the limitation "the combination of security products and *settings*". There is insufficient antecedent basis for this limitation in the claim. It is noted that amending claim 11 to depend from claim 10 and claim 13 to depend from claim 12 would resolve the issue.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 4, 5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahlstrom US Publication 2004/0006704 A1, and further in view of Beddoe US Patent 7,793,338 B1.

Referring to claims 1, 4 and 7, Dahlstrom discloses:

Receiving at a base computer details of all or selected security products operating at a point in time on a remote computer (paragraph 44)

Receiving, at the base computer, details of all or selected security products operating on other remote computers in communication with the base computer (paragraph 29).

Identifying one or more of the other remote computers having a same or similar combination of security products as the combination of security products operating on the remote computer (paragraph 46).

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> Identifying one or more vulnerabilities that were not identified by the combination of security products operating on the one or more of the other remote computers having the same or similar combination of security products as the combination of security products operating on the remote computer (paragraphs 27, 46, and 48). Dahlstrom discloses that the vulnerability assessment includes a filtering/determination process wherein if any of the additional products eliminate the vulnerability then the vulnerability is not listed (paragraph 48). Therefore only vulnerabilities that have been identified/but not remedied are listed.

Dahlstrom does not explicitly disclose the identified vulnerabilities including malware. However, Beddoe discloses the vulnerability database includes viruses and Trojan horses (column 11, lines 13-15). Dahlstrom and Beddoe are analogous art because they are from the same field of endeavor, endpoint security. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Dahlstrom and Beddoe before him or her, to modify the vulnerability database of Dahlstrom to include the viruses and Trojan horses of Beddoe. The suggestion/motivation for doing so would have been so that a more comprehensive security assessment that takes into account a wider range of vulnerabilities can be performed (column 11, lines 16-19).

In addition, McClure (which is incorporated by reference into Beddoe) discloses that when a vulnerability is located in one target computer, reassesing the vulnerability in a related second computer (paragraph 324). At the time of the invention, it would

have been obvious to one of ordinary skill in the art, having the teachings of Dahlstrom and Beddoe before him or her, to modify the vulnerability detection of Dahlstrom to include the active assessment of Beddoe. The suggestion/motivation for doing so would have been so that if other prior vulnerability tests failed, they are advantageously retried after a successful vulnerability test (McClure, paragraph 323).

Referring to claims 2, 5, and 8, Dahlstrom discloses providing information to the user of the remote computer that the remote computer may be susceptible to attack by the identified one or more malware processes (paragraphs 38, 71 and 72).

Claims 3, 6, 9 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahlstrom in view of Beddoe as applied above, and further in view of Mateev US Publication 2003/0101381 A1.

Referring to claims 3, 6, and 9, Dahlstrom discloses wherein the details of all or selected security products includes the name of the security products, versions, and information relevant to determine whether an actual vulnerability may exist for a product configuration (paragraphs 25, 26, and 40). Dahlstrom in view of Beddoe does not explicitly disclose the information to determine whether a vulnerability may exist including signature files. However, Mateev discloses that to determine whether a virus is present on a system, consulting a signature database (paragraph 83). Dahlstrom in view of Beddoe and Mateev are analogous art because they are from the same field of endeavor, security. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Dahlstrom in view of Beddoe and

Mateev before him or her, to modify the database of Dahlstrom in view of Beddoe to include the signature files of Mateev. The suggestion/motivation for doing so would have been because anti-virus products only require a signature to identify a virus (Mateev, paragraph 19) and would help determine whether an actual vulnerability may exist for a product configuration (Dahlstrom, paragraph 40).

Referring to claims 10 and 12, Dahlstrom discloses the details of all or selected security products further includes settings at a particular point in time (paragraphs 25, 26, and 40).

Referring to claims 11, and 13, Dahlstrom discloses:

> Identifying one or more of the other remote computers having the same or similar combination of security products and settings as the combination of security products operating on the remote computer (paragraph 46).
>
> Identifying one or more malware processes that were not identified by the combination of security products and settings operating on the one or more of the other remote computers having the same or similar combination of security products as the combination of security products operating on the remote computer (paragraphs 27, 46, and 48).

Conclusion

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 CORDELIA ZECHER whose telephone number is (571)272-7771. The examiner can normally be reached on Monday - Thursday 8:00 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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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.

/CORDELIA ZECHER/
Primary Examiner, Art Unit 2432

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Notice of References Cited	Application/Control No. 13/543,865	Applicant(s)/Patent Under Reexamination MORRIS ET AL.	
	Examiner CORDELIA ZECHER	Art Unit 2432	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2003/0195861	10-2003	McClure et al.	707/1
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2431
Melvyn Morris	)	Confirmation No.: 7855
Serial No.: 13/543,866	)	Examiner: Trang T. Doan
Filed: July 8, 2012	)	SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6890-93-CON	)	
Entitled: "Methods and Apparatus for Dealing With Malware"	)	*Electronically Submitted*

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

Dear Commissioner:

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

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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 charge such fee to Deposit Account 19-1970.
☐	**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). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	**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. Please charge Deposit Account 19-1970 in the amount of $180.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

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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,

SHERIDAN ROSS P.C.

By: /Brent R. Lindon/
Brent R. Lindon
Registration No. 67424
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: 11/27/2013

WBRT003043

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UNITED STATES PATENT AND TRADEMARK OFFICE

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

22442 7590 12/26/2013

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
DOAN, TRANG T	
ART UNIT	PAPER NUMBER
2431	

DATE MAILED: 12/26/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/543,866	07/08/2012	Melvyn Morris	6890-93-CON	7855

TITLE OF INVENTION: METHODS AND APPARATUS FOR DEALING WITH MALWARE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	03/26/2014

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.

PTOL-85 (Rev. 02/11)

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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)

22442 7590 12/26/2013
Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

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.
13/543,866	07/08/2012	Melvyn Morris	6890-93-CON	7855

TITLE OF INVENTION: METHODS AND APPARATUS FOR DEALING WITH MALWARE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	03/26/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
DOAN, TRANG T	2431	726-024000

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. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

WBRT003045

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UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/543,866	07/08/2012	Melvyn Morris	6890-93-CON	7855

22442 7590 12/26/2013

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
DOAN, TRANG T	
ART UNIT	PAPER NUMBER
2431	

DATE MAILED: 12/26/2013

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

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

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

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

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

PTOL-85 (Rev. 02/11)

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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.

Notices of Allowance and Fee(s) Due mailed between October 1, 2013 and December 31, 2013

(Addendum to PTOL-85)

If the "Notice of Allowance and Fee(s) Due" has a mailing date on or after October 1, 2013 and before January 1, 2014, the following information is applicable to this application.

If the issue fee is being timely paid on or after January 1, 2014, the amount due is the issue fee and publication fee in effect January 1, 2014. On January 1, 2014, the issue fees set forth in 37 CFR 1.18 decrease significantly and the publication fee set forth in 37 CFR 1.18(d)(1) decreases to $0.

If an issue fee or publication fee has been previously paid in this application, applicant is not entitled to a refund of the difference between the amount paid and the amount in effect on January 1, 2014.

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Notice of Allowability	Application No. 13/543,866	Applicant(s) MORRIS ET AL.	
	Examiner TRANG DOAN	Art Unit 2431	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 *amendment filed on 11/12/2013*.
   ☐ 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 *1-30*. 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. *11/477,807* .
      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 11/27/2013
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 _____.

/CORDELIA ZECHER/
Supervisory Patent Examiner, Art Unit 2431

WBRT003049

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

DETAILED ACTION

2. This action is in response to the amendment filed on 11/12/2013.

3. Claims 1, 3, 6, 8-9, 12, 14-15, 17, 20, 22-23, 26 and 28 have been amended. Claim 30 has been added. Claims 1-30 are pending for consideration.

Continued Examination Under 37 CFR 1.114

4. 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 11/12/2013 has been entered.

Information Disclosure Statement

5. The information disclosure statement (IDS) submitted on 11/27/2013 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Arguments

6. Applicant's arguments, filed on 11/12/2013, with respect to claims 1-29 have been fully considered and are persuasive. The rejection of claims 1-29 has been withdrawn.

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Allowable Subject Matter

7. Claims 1-30 are allowed.

8. The following is an examiner's statement of reasons for allowance: As noted above, the Examiner agrees with the Applicant's arguments on pages 11-12 of the Remarks, specifically that the prior art, taken alone, or in any combination, does not teach or suggest the combination of claim limitations including "*at least correlating, by the base computer, at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer; comparing, by the base computer, the correlated data about the computer object received from the first and second remote computers to other objects or entities to identify relationships between the correlated data and the other objects or entities; and classifying, by the base computer, the computer object as malware on the basis of said comparison*". The Examiner was unable to find a teaching, suggestion, or motivation that would render the above limitations obvious. Claims 1-30 are, therefore, novel and not obvious.

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."

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRANG DOAN whose telephone number is (571)272-0740. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cordelia P. Zecher can be reached on (571) 272-7771. 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.

/TRANG DOAN/
Examiner, Art Unit 2431

/CORDELIA ZECHER/
Supervisory Patent Examiner, Art Unit 2431

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Notice of References Cited	Application/Control No. 13/543,866	Applicant(s)/Patent Under Reexamination MORRIS ET AL.	
	Examiner TRANG DOAN	Art Unit 2431	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2002/0087734 A1	07-2002	Marshall et al.	709/310
*	B	US-2004/0006704 A1	01-2004	Dahlstrom et al.	713/200
*	C	US-2006/0085857 A1	04-2006	Omote et al.	726/024
*	D	US-7,603,374 B2	10-2009	Cameron et al.	1/1
	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.

WBRT003053

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WBRT003054

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Open Text Inc. EX-2018 - 257

EAST Search History

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	receiv$3 with object with created with remote adj computer$1 with identity with event adj type.clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2013/12/10 22:55
L2	0	second adj remote adj computer with identity with event adj type with object with performed.clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2013/12/10 22:56
L3	0	correlat$3 with portion with data with object with remote adj computer with second adj remote adj computer.clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2013/12/10 22:57
L4	0	compar$3 with base adj computer with correlated adj data with object with identity with relationship$1 with object$1.clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2013/12/10 22:58
L5	8	classify$3 with base adj computer with computer object with malware with comparison.clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2013/12/10 22:58

12/10/2013 11:04:24 PM
C:\Users\tdoan2\Documents\EAST\Workspaces\13543866.wsp

WBRT003055

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
(Use as many sheets as necessary)				Art Unit	2431
				Examiner Name	Trang T. Doan
Sheet	1	of	1	Attorney Docket Number	6890-93-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
/T.D./	1	2002/0194490	12/19/2002	Halperin et al.	
/T.D./	2	2003/0131256	07/10/2003	Ackroyd	
/T.D./	3	2003/0195861	10/16/2003	McClure et al.	

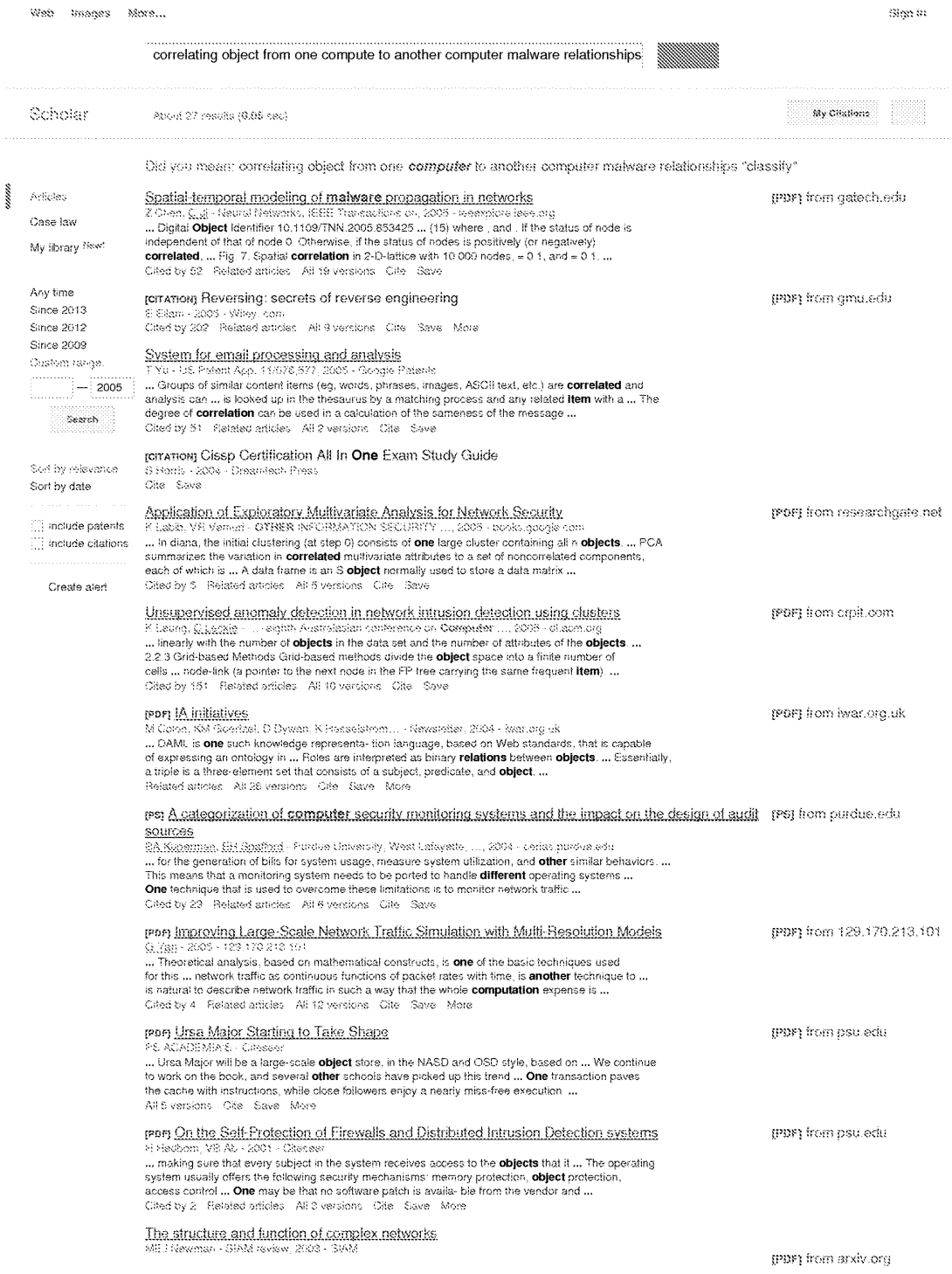
FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

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.
/T.D./	4	Official Action for European Patent Application No. 06755686.0 dated Jul. 31, 2013, 5 pages.
/T.D./	5	EXAMINER ARBUTINA, Extended European Search Report for European Patent Application No. 13167434.3 dated Aug. 1, 2013, 6 pages.
/T.D./	6	EXAMINER ARBUTINA, Extended European Search Report for European Patent Application No. 13167436.8 dated Aug. 30, 2013, 5 pages.
/T.D./	7	EXAMINER ZECHER, Official Action for U.S. Patent Application No. 13/543,865, mailed Aug. 6, 2013, 11 pages (Attorney's Ref. No. 6890-93-DIV)

Examiner Signature	/Trang Doan/	Date Considered	12/10/2013

*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.

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correlating object from one compute to another computer malware relationships

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Spatial-temporal modeling of **malware** propagation in networks [PDF] from gatech.edu
Z Chen, C Ji - Neural Networks, IEEE Transactions on, 2005 - ieeexplore.ieee.org
... Digital **Object** Identifier 10.1109/TNN.2005.853425 ... (15) where , and . If the status of node is independent of that of node 0. Otherwise, if the status of nodes is positively (or negatively) **correlated**, ... Fig. 7. Spatial **correlation** in 2-D-lattice with 10 000 nodes, = 0.1, and = 0.1. ...
Cited by 82 Related articles All 19 versions Cite Save

[CITATION] Reversing: secrets of reverse engineering [PDF] from gmu.edu
E Eilam - 2005 - Wiley. com
Cited by 202 Related articles All 9 versions Cite Save More

System for email processing and analysis
T Yu - US Patent App. 11/078,577, 2005 - Google Patents
... Groups of similar content items (eg, words, phrases, images, ASCII text, etc.) are **correlated** and analysis can ... is looked up in the thesaurus by a matching process and any related **item** with a ... The degree of **correlation** can be used in a calculation of the sameness of the message ...
Cited by 51 Related articles All 2 versions Cite Save

[CITATION] Cissp Certification All In **One** Exam Study Guide
S Harris - 2004 - Dreamtech Press
Cite Save

Application of Exploratory Multivariate Analysis for Network Security [PDF] from researchgate.net
K Labib, VR Vemuri - OTHER INFORMATION SECURITY ..., 2005 - books.google.com
... In diana, the initial clustering (at step 0) consists of **one** large cluster containing all n **objects**. ... PCA summarizes the variation in **correlated** multivariate attributes to a set of noncorrelated components, each of which is ... A data frame is an S **object** normally used to store a data matrix ...
Cited by 5 Related articles All 5 versions Cite Save

Unsupervised anomaly detection in network intrusion detection using clusters [PDF] from crpit.com
K Leung, C Leckie - ... eighth Australasian conference on **Computer** ..., 2005 - dl.acm.org
... linearly with the number of **objects** in the data set and the number of attributes of the **objects**. ... 2.2.3 Grid-based Methods Grid-based methods divide the **object** space into a finite number of cells ... node-link (a pointer to the next node in the FP tree carrying the same frequent **item**). ...
Cited by 151 Related articles All 10 versions Cite Save

[PDF] IA initiatives [PDF] from iwar.org.uk
M Cotton, KM Goertzel, D Dywan, K Hasselstrom... - Newsletter, 2004 - iwar.org.uk
... DAML is **one** such knowledge representa- tion language, based on Web standards, that is capable of expressing an ontology in ... Roles are interpreted as binary **relations** between **objects**. ... Essentially, a triple is a three-element set that consists of a subject, predicate, and **object**. ...
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[PS] A categorization of **computer** security monitoring systems and the impact on the design of audit sources [PS] from purdue.edu
EA Kosmatov, EH Spafford - Purdue University, West Lafayette, ..., 2004 - cerias.purdue.edu
... for the generation of bills for system usage, measure system utilization, and **other** similar behaviors. ... This means that a monitoring system needs to be ported to handle **different** operating systems ... **One** technique that is used to overcome these limitations is to monitor network traffic ...
Cited by 23 Related articles All 6 versions Cite Save

[PDF] Improving Large-Scale Network Traffic Simulation with Multi-Resolution Models [PDF] from 129.170.213.101
G Yan - 2005 - 129.170.213.101
... Theoretical analysis, based on mathematical constructs, is **one** of the basic techniques used for this ... network traffic as continuous functions of packet rates with time, is **another** technique to ... is natural to describe network traffic in such a way that the whole **computation** expense is ...
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[PDF] Ursa Major Starting to Take Shape [PDF] from psu.edu
PE ACADEMIA S - Citeseer
... Ursa Major will be a large-scale **object** store, in the NASD and OSD style, based on ... We continue to work on the book, and several **other** schools have picked up this trend ... **One** transaction paves the cache with instructions, while close followers enjoy a nearly miss-free execution ...
All 5 versions Cite Save More

[PDF] On the Self-Protection of Firewalls and Distributed Intrusion Detection systems [PDF] from psu.edu
H Hedbom, VB Ab - 2001 - Citeseer
... making sure that every subject in the system receives access to the **objects** that it ... The operating system usually offers the following security mechanisms: memory protection, **object** protection, access control ... **One** may be that no software patch is availa- ble from the vendor and ...
Cited by 2 Related articles All 3 versions Cite Save More

The structure and function of complex networks [PDF] from arxiv.org
ME J Newman - SIAM review, 2003 - SIAM

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... Digital **Object** Identifier. ... and Mathematical Organization Theory. (2013) Computational study of the US stock market evolution: a rank **correlation**-based network ... Neurocomputing 99, 178-187. (2013) Networks of noisy oscillators with **correlated** degree and frequency dispersion. ...
Cited by 10086 Related articles All 136 versions Cite Save

[PDF] The Internet Motion Sensor-A Distributed Blackhole Monitoring System. [PDF] from uoc.gr
M Bailey, E Cooke, F Jahanian, J Nazario, D Watson - NDSS, 2005 - csd.uoc.gr
... size of a light telescope, the greater the visibility into fainter, smaller, further and older **objects**. ... very significant amount of normalized local /8 traffic, those blocks do not always **correlate** with the ... **One** artifact of more recent worms is that after compro- mising a system, these worms ...
Cited by 231 Related articles All 15 versions Cite Save More

[PDF] CERIAS Tech Report 2004-26 A CATEGORIZATION OF **COMPUTER** SECURITY MONITORING SYSTEMS AND THE IMPACT ON THE DESIGN OF AUDIT ... [PDF] from oberlin.edu
BA Kuperman - 2004 - cs.oberlin.edu
... "signature" and "misuse" as if the terms were identical). While **one** could arguably ... Most of them are **objects** that are not supposed to be accessed based on the expressed pol- ... attack. • Deflection -- redirect an attack from the **item** being protected. ...
Related articles All 7 versions Cite Save More

[BOOK] Impacts and Risk Assessment of Technology for Internet Security: Enabled Information Small-medium Enterprises (TEISMEs).
CA Shoniregun - 2005 - books.google.com
... **Correlation** between annual sales and vulnerability coefficient ... 2 Chapter I eC among consumers and the immediate progression of TEI implementation by **other** SMEs ... The fact that **one** can use the Internet search browsers to explore and view, or for receiving and transmitting ...
Cited by 11 Related articles All 9 versions Cite Save More

[PDF] Survey/analysis of Levels I, II, and III attack attribution techniques [PDF] from psu.edu
D Cohen, K Narayanaswamy - Cs3 Inc., Apr, 2004 - Citeseer
... via a tunnel to **another** router cooperating with you, but still not be willing to route **other** packets that ... **Another** problem is that the trust **relationship** described above is transitive. ... data and that data will be passed along and accepted until it reaches a link where **one** neighbor does ...
Cited by 2 Related articles All 2 versions Cite Save More

Information Assurance Cyber Ecology [PDF] from dtic.mil
J Jorgensen, P Rossignol - 2003 - DTIC Document
... 13 2.4 EVOLUTIONARY **COMPUTATION** .... While many **other** researchers have examined and developed specific technologies to counter cyber attack ... **One** of the most important challenges confronting us is to be able to derive ...
All 2 versions Cite Save More

Automatic detection of software security vulnerabilities in executable program files [PDF] from auburn.edu
JAYE TEVIS - 2005 - etd.auburn.edu
... 1.1 Making Software More Secure The news of **another** virus threatening our **computers** has become a regularly expected ... be birthed through validation errors, **object** reuse, authentication errors, and boundary ... 16 **One other** area of exploitation to consider is core dumps. ...
Cited by 3 Related articles All 2 versions Cite Save

Proceedings of the International GI Workshop on Detection of Intrusions and Malware & Vulnerability Assessment [TXT] from tu-dortmund.de
G Riegel, M Meier - ... of the International GI Workshop on ..., 2004 - eldorado.tu-dortmund.de
... It is evident that **correlating** alerts that refer to failed attacks can result in the detection ... However, the **correlation** systems mentioned above assume that real attacks trigger more than a single ... systems can focus on alert clusters and discard all alerts that have not been **correlated**. ...
Related articles All 3 versions Cite Save

De-perimeterisation: Benefits and limitations
G Palmer - Information Security Technical Report, 2005 - Elsevier
... The **object** of this document is to provide an introduction to De-P and the foremost ... and individual engineers' creativity will hardly have seamless integration for management and the **correlation** of security ... possible to conclude that the process of De-P is a real **one** and something ...
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Create alert

Did you mean to search for: correlating object from one ***computer*** to another computer malware relationships "classify"

1 2 Next

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	49	identif$4 with common with object$1 with (inherit$3 descendant$3 relat$3) and (malware good bad malicious virus$2 un$safe safe trojan worm spyware adware) with (behavior$1 relat$3 pattern$1 relationship$1)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 23:19
S2	6	726/22-26.ccls. and correlat$3 with (data file$1 information object$1) with relationship$1 and classify$3 with (malware good bad malicious virus$2 safe trojan worm spyware adware)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 12:51
S3	4	(morris stubbs hartwig harter).in. and correlat$3 with (data file$1 information object$1) with relationship$1 and classify$3 with (malware good bad malicious virus$2 safe trojan worm spyware adware)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 12:53
S4	27	("20010052014" | "20020099952" | "20030023857" | "20030084323" | "20030101381" | "20030135791" | "20030177394" | "20040006704" | "20040039921" | "20040068618" | "20040083408" | "20040083810" | "20040153644" | "20040255165" | "20050021994" | "20050022014" | "20050027686" | "20050086500" | "20050210035" | "20080209562" | "20080320595" | "20090271867" | "6338141" | "6772346" | "6944772" | "7013483" | "7093239").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/12/10 12:57
S5	5	("7793338" | "20060085857" | "20030101381" | "20030195861" | "20040006704").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/12/10 12:58
S6	6	726/22-26.ccls. and correlat$3 with (data file$1 information object$1) with relationship$1 and classify$3 with (malware good bad malicious virus$2 safe trojan worm spyware adware)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	OFF	2013/12/10 14:15
S7	32	correlat$3 with (data file$1 information object$1 signature$1 key$1) with relationship$1 and classify$3 with (malware good bad malicious virus$2 un$safe safe trojan worm spyware adware)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 14:58
S8	9	correlat$3 with (data file$1 information object$1 signature$1 key$1 relationship$1) and classify$3 and relationship$1 with	US-PGPUB; USPAT;	OR	ON	2013/12/10 15:03

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		scor$3 with (malware good bad malicious virus$2 un$safe safe trojan worm spyware adware)	USOCR; EPO; DERWENT			
S9	16	classify$3 with correlat$3 with (data file$1 information object$1 signature$1 key$1 relationship$1) and scor$3 with (malware good bad malicious virus$2 un$safe safe trojan worm spyware adware)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 15:05
S10	26	(compar$3 identif$4) with relationship$1 with (object$1 key$1 signature child parent) and classif$5 with (malware good bad malicious virus$2 un$safe safe trojan worm spyware adware) with compar$4	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 15:25
S11	51	relationship$1 with (object$1 key$1 signature child parent) and classif$5 with (malware good bad malicious virus$2 un$safe safe trojan worm spyware adware) with compar$4	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 15:26
S12	13	relationship$1 with (object$1 key$1 signature child parent) and homogenous near1 entity	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 15:29
S13	0	(identif$5 establish$3 indicat$3 associat$3 link$3) with homogenous near1 entity with (malware good bad malicious virus$2 un$safe safe trojan worm spyware adware)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 15:31
S14	4	deduc$3 with (object$1 key$1 signature$1) with (malware good bad malicious virus$2 un$safe safe trojan worm spyware adware) with (behavior$1 relat$3 relationship$1)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 15:33
S15	2727	(object$1 key$1 signature$1) with (child$1 parent$1) and (malware good bad malicious virus$2 un$safe safe trojan worm spyware adware) with (behavior$1 relat$3 relationship$1)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 16:13
S16	146	(object$1 key$1 signature$1) with (child$1 parent$1) and (malware good bad malicious virus$2 un$safe safe trojan worm spyware adware) with (behavior$1 relat$3 relationship$1) and (compar$4) with (size folder location name creation date) with (object key signature)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 16:16
S17	9	(object$1 key$1 signature$1) with (child$1 parent$1) and (classif$5 identif$5 correlat$3) with (malware good bad malicious virus$2 un$safe safe trojan worm spyware adware) with (behavior$1 relat$3 relationship$1) and (compar$4) with (size folder location name creation date header) with (object key signature)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 16:17

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S18	11	("20030159070" | "20030172293" | "20050091192" | "20050155031" | "20050182964" | "20060026684" | "20070028304" | "20070067843" | "20070234062" | "7356843" | "7389539").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/12/10 16:20
S19	0	"2006008587"	US-PGPUB; USPAT; USOCR	OR	OFF	2013/12/10 16:23
S20	2	"20060085857"	US-PGPUB; USPAT; USOCR	OR	OFF	2013/12/10 16:23
S21	684	correlat$3 with (portion part segment chunk block) with (information object key signature data) with computer.clm.	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 23:01
S22	36	correlat$3 with (portion part segment chunk block) with (information object key signature data) with (second two more several many) near1 computer.clm.	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2013/12/10 23:02

12/ 10/ 2013 11:20:08 PM
C:\ Users\ tdoan2\ Documents\ EAST\ Workspaces\ 13543866.wsp

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13543866	MORRIS ET AL.
	Examiner	**Art Unit**
	TRANG DOAN	2431

CPC		
Symbol	**Type**	**Version**

CPC Combination Sets				
Symbol	**Type**	**Set**	**Ranking**	**Version**

/TRANG DOAN/ Examiner.Art Unit 2431	12/10/2013	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	30	
/CORDELIA ZECHER/ Supervisory Patent Examiner.Art Unit 2431	12/11/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4

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IPR2023-00633
Open Text Inc. EX-2018 - 265

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13543866	MORRIS ET AL.
	Examiner	**Art Unit**
	TRANG DOAN	2431

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
726	24

CROSS REFERENCE(S)

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
726	22	23	25	26	

INTERNATIONAL CLASSIFICATION										
CLAIMED					**NON-CLAIMED**				
G	0	6	F	11 / 00 (2006.01.01)	G	0	6	F	12 / 14 (2006.01.01)
G	0	6	F	7 / 04 (2006.01.01)	G	0	6	F	17 / 30 (2006.01.01)

/TRANG DOAN/ Examiner.Art Unit 2431	12/10/2013	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	30	
/CORDELIA ZECHER/ Supervisory Patent Examiner.Art Unit 2431	12/11/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4

WBRT003063

IPR2023-00633
Open Text Inc. EX-2018 - 266

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13543866	MORRIS ET AL.
	Examiner	**Art Unit**
	TRANG DOAN	2431

☒ 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

/TRANG DOAN/ Examiner.Art Unit 2431	12/10/2013	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	30	
/CORDELIA ZECHER/ Supervisory Patent Examiner.Art Unit 2431	12/11/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13543866	MORRIS ET AL.
	Examiner	Art Unit
	TRANG DOAN	2431

✓	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	03/14/2013	07/01/2013	12/10/2013						
	1	✓	✓	=						
	2	✓	✓	=						
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	6	✓	✓	=						
	7	✓	✓	=						
	8	✓	✓	=						
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	27	✓	✓	=						
	28	✓	✓	=						
	29	✓	✓	=						
	30			=						

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13543866	MORRIS ET AL.
	Examiner	Art Unit
	CORDELIA ZECHER	2432

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
726	24 (text)	3/14/13	cz

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor Search	3/14/13	cz
Searched EAST (see attached)	3/14/13	cz
Updated East: (726/22-26) with limited text search; and text search only.	12/10/2013	T.D.
Scholar Google Search: see attached search history.	12/10/2013	T.D.

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	Claims Search Only.	12/10/2013	T.D.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
(Use as many sheets as necessary)				Art Unit	2431
				Examiner Name	Trang T. Doan
Sheet	1	of	1	Attorney Docket Number	6890-93-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

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.
	1	Official Action with English Translation for China Patent Application No. 20110036124.1, dated Oct. 23, 2013, 8 pages

Examiner Signature		Date Considered	

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THE STATE INTELLECTUAL PROPERTY OFFICE OF THE PEOPLE'S REPUBLIC OF CHINA

Address: 6 Xi Tu Cheng Lu, Haidian, Beijing 100088

Applicant:	**PREVX LIMITED**	
Attorney:	**Maohua Wang**	Date of Notification:
Application No.:	**201110036124.1**	Date 23 Month 10 Year 2013
Title of the Invention:	**METHODS AND APPARATUS FOR DEALING WITH MALWARE**	

Notification of Fourth Office Action

1. ☒ The examiner received the response submitted by the applicant on July 2, 2013 to the 3rd Office Action and further examination as to substance has been carried out on the above-identified patent application for invention on this new basis.
   ☐ According to the Reexamination Decision made by the Patent Reexamination Board of the Patent Office on _____, examination as to substance on the above-identified application has been resumed.

2. The amendment submitted by the applicant on _____ does not comply with the provisions of Rule 51 paragraph 3 of the Implementing Regulations.

3. Further examination as to substance has been carried out based on the documents as specified below:
   ☐ The amended application documents attached to the response to the previous Office Action.
   ☒ The application documents based on which the previous examination was carried out and the substitution pages attached to the response to the previous Office Action.
   ☐ The application documents based on which previous examination was carried out.
   ☐ The application documents confirmed by the Reexamination Decision.

4. ☒ No further reference documents are cited in this Office Action.
   ☐ Below is/are the reference document(s) cited in this Notification:

No.	Number(s) or Title(s) of Reference(s)	Date of Publication (or the filing date of conflicting application)
1		Date:____Month:____Year: ____
2		Date:____Month:____Year: ____
3		Date:____Month:____Year: ____
4		Date:____Month:____Year: ____
5		Date:____Month:____Year: ____

5. Conclusions of the Office Action:
   ☐ On the Specification:
   ☐ The subject matter contained in the application is not patentable under Article 5 of the Patent Law.
   ☐ The description does not comply with Article 26 paragraph 3 of the Patent Law.
   ☐ The description does not comply with Article 33 of the Patent Law.
   ☐ The draft of the description does not comply with Rule 18 of the Implementing Regulations.

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☐ The draft of the description does not comply with Rule 19 of the Implementing Regulations

☒ On the Claims:
- ☐ Claim(s)_____does/do not possess the novelty as required by Article 22 paragraph 2 of the Patent Law.
- ☐ Claim(s)_____does/do not possess the inventiveness as required by Article 22 paragraph 3 of the Patent Law.
- ☐ Claim(s)_____does/do not possess the practical applicability as required by Article 22 paragraph 4 of the Patent Law.
- ☐ Claim(s)_____is/are not patentable under Article 25 of the Patent Law.
- ☒ Claim(s) 1-3, 12-25 does/do not comply with Article 26 paragraph 4 of the Patent Law.
- ☐ Claim(s)_____does/do not comply with Article 31 paragraph 1 of the Patent Law.
- ☐ Claim(s)_____does/do not comply with Article 33 of the Patent Law.
- ☐ Claim(s)_____does/do not comply with the definition of inventions prescribed by Rule 2 paragraph 1 of the Implementing Regulations.
- ☐ Claim(s)_____does/do not comply with the provisions of Rule 13 paragraph 1 of the Implementing Regulations.
- ☐ Claim(s)_____does/do not comply with the provisions of Rule 20 of the Implementing Regulations.
- ☐ Claim(s)_____does/do not comply with the provisions of Rule 21 of the Implementing Regulations.
- ☒ Claim(s) 5,6,8,10,11,13-22,27,28,30,32,33 does/do not comply with the provisions of Rule 22 of the Implementing Regulations.
- ☐ Claim(s)_____does/do not comply with the provisions of Rule 23 of the Implementing Regulations.
- ☐ The divisional application does not comply with the provisions of Rule 43 paragraph 1 of the Implementing Regulations.

The detailed explanation of the above conclusions is set forth in the text portion of the Notification.

6. In view of the conclusions set forth above, the Examiner is of the opinion that:
   - ☐ The applicant should make amendments to the application documents as directed in the text portion of the Notification.
   - ☒ The applicant should expound in the response reasons why the application is patentable and make amendments to the application where there are deficiencies as pointed out in the text portion of the Notification, otherwise, the application will be rejected.
   - ☐ The application contains no allowable invention, and therefore, if the applicant fails to submit sufficient reasons to prove that the application does have merits, it will be rejected.
   - ☐
7. The followings should be taken into consideration by the applicant in making the response:
   (1) Under Article 37 of the Patent Law, the applicant should respond to the office action within 2 months counting from the date of receipt of the Notification. If, without any justified reason, the time limit is not met, the application shall be deemed to have been withdrawn.
   (2) Any amendment to the application should be in conformity with the provisions of Article 33 of the Patent Law. Substitution pages should be in duplicate and the format of the substitution should be in conformity with the relevant provision contained in "The Examination Guidelines".
   (3) The response to the Notification and/or revision of the application should be mailed to or handed over to the "Reception Division" of the Patent Office, and documents not mailed or handed over to the Reception Divisions have no legal effect.
   (4) Without an appointment, the applicant and/or his agent shall not interview with the Examiner in the Patent Office.
8. This Notification contains a text portion of 2 pages and the following attachments:
   - ☐ _____cited reference(s), totaling _____pages.
   - ☐

Examination Dept. _____ Examiner:_____ Seal of the Examination Department

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Text of the Fourth Office Action

Chinese Patent Application No. 201110036124.1

Applicant submitted the response and the amended application document. The Examiner thus continues examination and now provides the following comments.

I. Claims 1-3 and 12-25 do not comply with Article 26.4 of the Chinese Patent Law.

1. Claims 1, 12 and 23 recite "the object or similar objects", but the meaning of "similar objects" is unclear and those skilled in the art will not understand what the "similar objects" refers to.

Claims 1, 12 and 23 recite "including at least the key of the object initiating the event, the event type, and the key of the object or the identity of another entity on which the event is being performed", but it is unclear what "on which" refers to. Further, it is unclear whether "the key of the object initiating the event" and "the key of the object" are the same. If yes, these two phrases are redundant; otherwise, they should be definitely differentiated.

Claims 1, 12 and 23 recite "classifying the computer object as malware on the basis of said comparison", which is unclear in terms of logic. Logically, it should be that the computer object is classified as malware on the basis of results of said comparison. Therefore, these claims are unclear.

In view of the above, Claims 1, 12 and 23 are unclear and do not comply with Article 26.4 of the Chinese Patent Law.

2. Claims 2, 13 and 24 recites "using said identified relationships to deduce that the new behaviours of an object can be attributed to association with another object", which has an unclear meaning. Claims 2, 13 and 24 also recites "if that new behaviour is malevolent, classifying either or all objects as malware as appropriate", but the meaning of "as appropriate" is unclear. In other words, it is unclear when one object is classified as malware and when all objects are classified as malware.

In view of the above, Claims 2, 13 and 24 are unclear and do not comply with Article 26.4 of the Chinese Patent Law.

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3. Claims 3 and 25 recite "the object or similar objects", but the meaning of "similar objects" is unclear and those skilled in the art will not understand what the "similar objects" refers to. Therefore, Claims 3 and 25 are unclear and do not comply with Article 26.4 of the Chinese Patent Law.

4. Claims 12-22 each directs to an apparatus for classifying a computer object as malware. In theses claims, the base computer is defined by using steps of a method, but the drafting manner covers all embodiments capable of implementing the method. The description only discloses a specific implementation, i.e., using computer program flow to implement the method. Those skilled in the art, according to disclosure of the description, will not understand whether there are equivalent embodiments capable of implementing the method. Therefore, these claims can not be supported by the description and do not comply with the provision of Article 26.4 of the Chinese Patent Law.

Since Claims 23-33 have claimed product claims which completely correspond to method claims 1-11, Applicant is suggested to cancel Claims 12-22.

II. Claims 5, 6, 8, 10, 11, 13-22, 27, 28, 30, 32 and 33 do not comply with Rule 22.2 of the Implementation Regulations of the Chinese Patent Law.

Claims 5, 6, 8, 10, 11, 13-22, 27, 28, 30, 32 and 33 are multiple dependent claims, which refer to previous multiple dependent claims. Therefore, these claims do not comply with Rule 22.2 of the Implementation Regulations of the Chinese Patent Law.

For the reasons indicated above, claims of the present application have no prospect of being patented. In the meanwhile, the specification contains no other substance that can be patented. Therefore, even if Applicant amends the application document, the present application has no prospect of allowance. If Applicant fails to present convincing reasons within the specified time period, then the present application will be rejected.

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中华人民共和国国家知识产权局 开1110110

100020

北京市朝阳区东三环中路1号环球金融中心办公楼东楼20层 北京市金杜律师事务所
王茂华 黄倩

发文日：

2013年10月23日

申请号或专利号：201110036124.1　　发文序号：2013101800867280

申请人或专利权人：普瑞维克斯有限公司

发明创造名称：用于处理恶意软件的方法和装置

第四次审查意见通知书

1. ☒审查员已经收到申请人于2013年7月2日提交的意见陈述书，在此基础上审查员对上述专利申请继续进行实质审查。

☐根据国家知识产权局专利复审委员会于_____年_____月_____日作出的复审决定，审查员对上述专利申请继续进行实质审查。

☐_____

2. ☐经审查，申请人于_____提交的修改文件，不符合专利法实施细则第51条第3款的规定，不予接受。

3. 继续审查是针对下列申请文件进行的：

☐上述意见陈述书中所附的经修改的申请文件。

☒前次审查意见通知书所针对的申请文件以及上述意见陈述书中所附的经修改的申请文件替换文件。

☐前次审查意见通知书所针对的申请文件。

☐上述复审决定所确定的申请文件。

☐_____

4. ☒本通知书未引用新的对比文件。

☐本通知书引用下列对比文件（其编号续前，并在今后的审查过程中继续沿用）：

编号	文件号或名称	公开日期（或抵触申请的申请日）

5. 审查的结论性意见：

关于说明书：

☐申请的内容属于专利法第5条规定的不授予专利权的范围。

☐说明书不符合专利法第26条第3款的规定。

☐说明书的修改不符合专利法第33条的规定。

☐说明书的撰写不符合专利法实施细则第17条的规定。

☐_____

关于权利要求书：

☐权利要求_____不符合专利法第2条第2款的规定。

☐权利要求_____不符合专利法第9条第1款的规定。

中华人民共和国国家知识产权局 专利审查业务章

210403 2010.2

纸件申请，回函请寄：100088 北京市海淀区蓟门桥西土城路6号 国家知识产权局专利局专利审查业务部 收

电子申请，应当通过电子专利申请系统以电子文件形式提交相关文件。除另有规定外，以纸件等其他形式提交的文件视为未提交。

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☐权利要求____不具备专利法第22条第2款规定的新颖性。
☐权利要求____不具备专利法第22条第3款规定的创造性。
☐权利要求____不具备专利法第22条第4款规定的实用性。
☐权利要求____属于专利法第25条规定的不授予专利权的范围。
☒权利要求 1-3, 12-25 不符合专利法第26条第4款的规定。
☐权利要求____不符合专利法第31条第1款的规定。
☐权利要求____的修改不符合专利法第33条的规定。
☐权利要求____不符合专利法实施细则第19条的规定。
☐权利要求____不符合专利法实施细则第20条的规定。
☐权利要求____不符合专利法实施细则第21条的规定。
☒权利要求 5, 6, 8, 10, 11, 13-22, 27, 28, 30, 32, 33 不符合专利法实施细则第22条的规定。
☐____

☐申请不符合专利法第26条第5款或者实施细则第26条的规定。
☐申请不符合专利法第20条第1款的规定。
☐分案申请不符合专利法实施细则第43条第1款的规定。
上述结论性意见的具体分析见本通知书的正文部分。

6.基于上述结论性意见，审查员认为：
☐申请人应当按照通知书正文部分提出的要求，对申请文件进行修改。
☒申请人应当在意见陈述书中论述其专利申请可以被授予专利权的理由，并对通知书正文部分中指出的不符合规定之处进行修改，否则将不能授予专利权。
☐专利申请中没有可以被授予专利权的实质性内容，如果申请人没有陈述理由或者陈述理由不充分，其申请将被驳回。
☐____

7.申请人应注意下列事项：

（1）根据专利法第37条的规定，申请人应当在收到本通知书之日起的2个月内陈述意见，如果申请人无正当理由逾期不答复，其申请将被视为撤回。

（2）申请人对其申请的修改应当符合专利法第33条的规定，不得超出原说明书和权利要求书记载的范围，同时申请人对专利申请文件进行的修改应当符合专利法实施细则第51条第3款的规定，按照本通知书的要求进行修改。

（3）申请人的意见陈述书和/或修改文本应当邮寄或递交国家知识产权局专利局受理处，凡未邮寄或递交给受理处的文件不具备法律效力。

（4）未经预约，申请人和/或代理人不得前来国家知识产权局与审查员举行会晤。

8. 本通知书正文部分共有 2 页，并附有下列附件：
☐引用的对比文件的复印件共____份____页。
☐____

审查员：赵晓敏　　联系电话：　　审查部门：专利审查协作北京中心发明审查部

纸件申请，回函请寄：100088 北京市海淀区蓟门桥西土城路6号 国家知识产权局专利局受理处收 电子申请，应当通过电子专利申请系统以电子文件形式提交相关文件。除另有规定外，以纸件等其他形式提交的文件视为未提交。

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中华人民共和国国家知识产权局

第四次审查意见通知书

申请号:2011100361241

078

申请人提交了意见陈述书和经修改的申请文件，审查员继续进行审查，再次提出如下审查意见。

权利要求 1-3,12-25 不符合专利法第二十六条第四款的规定。

1、权利要求 1、12、23 中出现了“所述对象或类似对象”，不清楚“类似对象”的含义，不清楚具体指什么对象；

权利要求 1、12、23 中出现了“包括发起所述事件的对象的关键字、事件类型、以及所述对象的关键字或在其上执行所述事件的其他实体的身份”，其中不清楚“其上”指什么内容，即不清楚在什么之上执行所述事件；再者，不清楚“所述事件的对象的关键字”、“所述对象的关键字”之间的关系，不清楚二者是否为相同的技术特征，如果是则包括的内容有重复内容，否则，应进行清楚的限定/界定；

权利要求 1、12、23 中出现了“根据所述比较，将所述计算机对象分类为恶意软件”，该句逻辑不清楚，逻辑上应该是根据比较的结果，在不同结果下将计算机对象分类为恶意的或者非恶意的软件，因此，该权利要求不清楚；

因此，权利要求 1、12、23 不清楚，不符合专利法第二十六条第四款的规定。

2、权利要求 2、13、24 中出现了“使用所述识别的关系来推导对象的新行为可以被分配到与另一对象的关联，并且如果新行为是恶意的则适当地将一个或所有对象分类为恶意软件”，首先，该句前半句语句不通顺，句意不清楚；再者，不清楚“适当地将一个或所有对象分类为恶意软件”，句意不清楚，不清楚适当地具体含义，不清楚什么情况下是适当地、什么情况下将一个对象分类为恶意软件、什么情况下将所有对象分类为恶意软件。因此，权利要求 2、13、24 不清楚，不符合专利法第二十六条第四款的规定。

3、权利要求 3、25 中出现了“对象或类似对象”，其中不清楚“类似对象”的含义，因此，权利要求 3、25 不清楚，不符合专利法第二十六条第四款的规定。

4、权利要求 12-22 请求保护一种将计算机对象分类为恶意软件的装置，其中包括的基计算机采用方法步骤来限定，该方法限定概括了能够实现所述方法的所有方式，而说明书中仅仅公开了使用计算机程序流程来实现该方法的特定方式，本领域技术人员根据说明书的内容不能明了还可以采用说明书中没有提到的其他等同替代方式来实现相同的方法，因此，权利要求 12-22 请求保护的方案得不到说明书的支持，不符合专利法第二十六条第四款的规定。

鉴于权利要求 23-33 已经记载了与权利要求 1-11 所述方法完全对应一致的产品权利要求，因此，建议将权利要求 12-22 删除。

（三）权利要求 5,6,8,10,11,13-22,27,28,30,32,33 不符合专利法实施细则第二十二条的规定。

1、权利要求 5,6,8,10,11,16,17,19,21,22,27,28,30,32,33 属于多项从属权利要求，并引用了在前

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多项从属权利要求，因此，不符合专利法实施细则第二十二条第二款的规定。

2、权利要求 13-22 引用的主题名称和独立权利要求 12 的主题名称不一致，因而，不符合专利法实施细则第二十二条第一款的规定。



综上所述，本申请不能被授予专利权，申请人应对权利要求书进行修改并对说明书进行适应性修改，对申请文件的修改应符合专利法第三十三条、实施细则第五十一条第三款的规定，申请人应提交修改替换页以及修改对照页，并具体陈述其克服了审查员所指出的缺陷的理由，以及具体陈述其修改不超范围的理由、并且详细列出其在原说明书和权利要求书中记载的依据和出处。



审查员姓名：赵晓敏　　审查员代码：19[illegible]3

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Electronic Patent Application Fee Transmittal	
Application Number:	13543866
Filing Date:	08-Jul-2012
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Filer:	Brent Robert Lindon/Robert Roe-Pachirat
Attorney Docket Number:	6890-93-CON
Filed as Large 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:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt	
EFS ID:	17936294
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Customer Number:	22442
Filer:	Brent Robert Lindon/Robert Roe-Pachirat
Filer Authorized By:	Brent Robert Lindon
Attorney Docket Number:	6890-93-CON
Receipt Date:	16-JAN-2014
Filing Date:	08-JUL-2012
Time Stamp:	16:54:46
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$180
RAM confirmation Number	3701
Deposit Account	191970
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		6890-93-CON_IDS_04.pdf	147472 d18468d6fc0a147de53bd54fdc37b98362aae75f	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	Non Patent Literature	CN201110036124_OA_10-23-2013.pdf	304552 ac52ea364105070a6492a318c5be6e53e80fc738	no	8
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30536 5f87c7bcaee7b4f3eabc1a7af25499a04ced7609	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	482560		

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:	)	Group Art Unit: 2431
Melvyn Morris	)	Confirmation No.: 7855
Serial No.: 13/543,866	)	Examiner: Trang T. Doan
Filed: July 8, 2012	)	SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6890-93-CON	)	
Entitled: "Methods and Apparatus for Dealing With Malware"	)	*Electronically Submitted*

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

Dear Commissioner:

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

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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 charge such fee to Deposit Account 19-1970.
☐	**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). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☒	**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. Please charge Deposit Account 19-1970 in the amount of $180.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

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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,

SHERIDAN ROSS P.C.

By: /Brent R. Lindon/
Brent R. Lindon
Registration No. 67424
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
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Date: January 16, 2014

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UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/543,866	07/08/2012	Melvyn Morris	6890-93-CON	7855

22442 7590 03/17/2014

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
DOAN, TRANG T	
ART UNIT	PAPER NUMBER
2431	

NOTIFICATION DATE	DELIVERY MODE
03/17/2014	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):

e-docket@sheridanross.com

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Notice of Allowability	Application No. 13/543,866	Applicant(s) MORRIS ET AL.	
	Examiner TRANG DOAN	Art Unit 2431	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 *the IDS filed on 1/16/2014*.
   ☐ 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 *1-30*. 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. *11/477,807* .
      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 1/16/2014
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 _____.

/CORDELIA ZECHER/
Supervisory Patent Examiner, Art Unit 2431

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DETAILED ACTION

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

2. Claims 1-30 are allowed.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 1/16/2014 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRANG DOAN whose telephone number is (571)272-0740. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cordelia P. Zecher can be reached on (571) 272-7771. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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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.

/TRANG DOAN/
Examiner, Art Unit 2431

/CORDELIA ZECHER/
Supervisory Patent Examiner, Art Unit 2431

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
(Use as many sheets as necessary)				Art Unit	2431
				Examiner Name	Trang T. Doan
Sheet	1	of	1	Attorney Docket Number	6890-93-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

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.
/T.D./	1	Official Action with English Translation for China Patent Application No. 20110036124.1, dated Oct. 23, 2013, 8 pages

Examiner Signature	/Trang Doan/	Date Considered	03/03/2014

*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.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: Melvyn Morris	Group Art Unit: 2432
Application No.: 13/543,866	Examiner: Doan, Trang T
Filed: July 08, 2012	Confirmation No.: 7855
Atty. File No.: 6890-93-CON	
For: Methods and Apparatus for Dealing with Malware	

AMENDMENT AFTER ALLOWANCE PURSUANT TO 37 CFR § 1.312

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

Commissioner:

Applicant(s) submit this Amendment After Allowance pursuant to 37 CFR § 1.312 in response to the Notice of Allowance and Fee(s) Due having a mailing date of December 26, 2013. An amendment may be entered after the mailing of a Notice of Allowance but prior to payment of the issue fee upon the recommendation of the primary examiner. Therefore, it is respectfully requested that the above-referenced application be amended as follows:

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

Remarks/Arguments begin on page 9 of this paper.

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Amendments to the Claims:

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

Listing of Claims:

1. (Currently Amended) A method of classifying a computer object as malware, the method comprising:

at a base computer, receiving data about a computer object from a first remote computer on which the computer object or similar computer objects are stored, wherein said data includes information about events initiated or involving the computer object when the computer object is created, configured or runs on the first remote computer, said information including at least ~~the~~ an identity of an object initiating the event, the event type, and an identity of ~~the~~ an object or other entity on which the event is being performed;

at the base computer, receiving data about the computer object from a second remote computer on which the computer object or similar computer objects are stored, wherein said data includes information about events initiated or involving the computer object when the computer object is created, configured, or runs on the second remote computer, said information including at least ~~the~~ an identity of ~~the~~ an object initiating the event, the event type, and ~~the~~ an identity of ~~the~~ an object or other entity on which the event is being performed;

storing, at the base computer, said data received from the first and second remote computers;

correlating, by the base computer, at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer;

comparing, by the base computer, the correlated data about the computer object received from the first and second remote computers to other objects or entities to identify relationships between the correlated data and the other objects or entities; and

classifying, by the base computer, the computer object as malware on the basis of said comparison.

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2. (Original) A method according to claim 1, wherein the relationship is between objects related directly, or between objects related via other objects.

3. (Previously Presented) A method according to claim 1, wherein where an object and other objects are found to have a relationship, monitoring those related objects as a homogenous entity and identifying a common object of the homogenous entity as a malware object.

4. (Original) A method according to claim 1, comprising deducing an object to be malware based on the behaviour of a related object.

5. (Currently Amended) A method according to claim 1, wherein if at least one other object to which said computer object is related is classed as malware, then classifying said computer object as malware.

6. (Previously Presented) A method according to claim 1, wherein said other objects include the object or similar objects stored on at least one of the first and second remote computers.

7. (Currently Amended) A method according to claim 1, wherein said other objects include other objects that are parent objects or child objects or otherwise process-related objects to said computer object.

8. (Currently Amended) A method according to claim 1, wherein the data about the computer object that is sent from the respective remote computer to the base computer and that is used in the comparison includes one or more of:

executable instructions contained within or constituted by the computer object;
the size of the computer object;
the current name of the computer object;
the physical and folder location of the computer object on disk;
the original name of the computer object;

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the creation and modification dates of the computer object;

vendor, product and version and any other information stored within the computer object; and[[,]]

the computer object header or header held by the respective remote computer.

9. (Previously Presented) A method according to claim 1, wherein the data is sent in the form of a key that is obtained by a hashing process carried out in respect of the objects on the respective remote computer.

10. (Currently Amended) A method according to claim 9, wherein the key has at least one component that represents executable instructions contained within or constituted by the computer object.

11. (Currently Amended) A method according to claim 9, wherein the key has at least one component that represents data about said computer object.

12. (Currently Amended) A method according to claim 11, wherein said data about said computer object includes at least one of:

the current name of the computer object;

the physical and folder location of the computer object on disk;

the original name of the computer object;

the creation and modification dates of the computer object;

vendor, product and version and any other information stored within the computer object;

the computer object header or header held by the respective remote computer; and,

events initiated by or involving the computer object when the computer object is created, configured or runs on the respective remote computers.

13. (Currently Amended) A method according to claim 9, wherein the key has at least one component that represents the physical size of the computer object.

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14. (Currently Amended) A method according to claim 1, comprising initially classifying ~~an~~ a computer object as not malware, generating a mask for said computer object that defines acceptable behaviour for the computer object, monitoring an operation of the computer object on at least one of the first and second remote computers and reclassifying the computer object as malware if the actual monitored behaviour extends beyond that permitted by the mask.

15. (Currently Amended) An ~~Apparatus~~apparatus for classifying a computer object as malware, the apparatus comprising:

a base computer constructed and arranged to receive data about a computer object from a first remote computer on which the computer object or similar computer objects are stored, wherein said data includes information about events initiated or involving the computer object when the computer object is created, configured, or runs on the first remote computer, said information including at least ~~the~~ an identity of ~~the~~ an object initiating the event, the event type, and ~~the~~an identity of ~~the~~an object or other entity on which the event is being performed;

the base computer being constructed and arranged to receive data about the computer object from a second remote computer on which the computer object or similar computer objects are stored, wherein said data includes information about events initiated or involving the computer object when the computer object is created, configured, or runs on the second remote computer, said information including at least ~~the~~ an identity of ~~the~~ an object initiating the event, the event type, and ~~the~~ an identity of ~~the~~ an object or other entity on which the event is being performed;

the base computer being constructed and arranged to correlate at least a portion of the data about the computer object received from the first remote computer to at least a portion of the data about the computer object received from the second remote computer;

the base computer being constructed and arranged to compare the data about the computer object received from the first and second remote computers to other objects or entities to identify relationships between the correlated data and the other objects or entities; and

the base computer being constructed and arranged to classify the computer object as malware on the basis of said comparison.

16. (Currently Amended) The ~~Apparatus~~ apparatus according to claim 15, wherein the base computer is constructed and arranged so as to identify the relationship between objects related directly, or between objects related via other objects.

17. (Currently Amended) The ~~Apparatus~~apparatus according to claim 15, wherein the base computer is constructed and arranged so as, where an object and other objects are found to have a relationship, to ~~monitoring~~ monitor those related objects as a homogenous entity and identify a common object of the homogenous entity as a malware object.

18. (Currently Amended) The apparatus ~~Apparatus~~ according to claim 15, wherein the base computer is constructed and arranged so as to deduce an object to be malware based on the behaviour of a related object.

19. (Currently Amended) The apparatus~~Apparatus~~ according to claim 15, wherein the base computer is constructed and arranged so that if at least one other object to which said object is related is classed as malware, then said object is classified as malware.

20. (Currently Amended) The apparatus~~Apparatus~~ according to claim 15, wherein the base computer is constructed and arranged so that said other objects include the object or similar objects stored on at least one of the first and second remote computers.

21. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 15, wherein the base computer is constructed and arranged so that said other objects include other objects that are parent objects or child objects or otherwise process-related objects to said object.

22. (Currently Amended) The apparatus~~Apparatus~~ according to claim 15, wherein the base computer is constructed and arranged so as to compare the data where the data includes one or more of:

executable instructions contained within or constituted by the computer object;

the size of the computer object;

the current name of the computer object;

the physical and folder location of the computer object on disk;

the original name of the computer object;

the creation and modification dates of the computer object;

vendor, product, and version and any other information stored within the computer object; and[[,]]

the computer object header or header held by the respective remote computer.

23. (Currently Amended) The apparatus~~Apparatus~~ according to claim 15, wherein the base computer is constructed and arranged so as to be able to process data that is sent in the form of a key that is obtained by a hashing process carried out in respect of the objects on said respective remote computer.

24. (Currently Amended) The apparatus~~Apparatus~~ according to claim 23, wherein the key has at least one component that represents executable instructions contained within or constituted by the computer object.

25. (Currently Amended) The apparatus~~Apparatus~~ according to claim 23, wherein the key has at least one component that represents data about said computer object.

26. (Currently Amended) Apparatus according to claim 25, wherein said data about said object includes at least one of:

the current name of the computer object;

the physical and folder location of the computer object on disk;

the original name of the computer object;

the creation and modification dates of the computer object;

vendor, product, and version and any other information stored within the computer object;

the computer object header or header held by the respective remote computer; and

events initiated by or involving the computer object when the computer object is created, configured, or runs on the respective remote computers.

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27. (Currently Amended) The apparatus~~Apparatus~~ according to claim 23, wherein the key has at least one component that represents the physical size of the computer object.

28. (Currently Amended) The apparatus~~Apparatus~~ according to claim 15, wherein the base computer is constructed and arranged to generate a mask for ~~an~~ a computer object that is initially classed not as malware, said mask defining acceptable behaviour for the computer object, and the base computer is constructed and arranged to monitor an operation of the computer object on at least one of the first and second remote computers and to reclassify the computer object as malware if the actual monitored behaviour extends beyond that permitted by the mask.

29. (Original) A computer program recorded on non-transitory computer readable medium comprising program instructions for causing a computer to perform the method of claim 1.

30. (Previously Presented) A method according to claim 1, wherein the data received about the computer object from the first remote computer is different than the data received about the computer object from the second remote computer.

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REMARKS

A Notice of Allowance and Fee(s) Due was mailed on December 26, 2013. The amendments to the claims set forth above make changes to Claims 1, 5, 7, 8, and 10-28 to address typographical errors in the claims and to ensure the consistent use of terms. No claims have been canceled. Accordingly, Claims 1-30 remain present and ready for issue.

These amendments are required to correct typographical errors and to ensure the consistent use of terms, and therefore ensure proper protection of the invention. No substantial amount of additional work on the part of the Office is required. In particular, the scope of the claims is not affected by the proposed amendments. Therefore, the claims remain patentable. This amendment was not presented earlier because it was discovered only after Applicant reviewed the allowed claims.

Pursuant to 37 C.F.R. §1.312, an amendment may be entered after the mailing of a Notice of Allowance, but prior to the payment of the Issue Fee, upon the recommendation of the primary Examiner. Therefore, it is respectfully requested that the above-referenced application be amended as set forth herein.

The Examiner is invited to contact the undersigned by telephone if doing so would expedite the resolution of this case.

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: March 17, 2014

By: /Brent R. Lindon/
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1560 Broadway, Suite 1200
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Telephone: 303-863-9700

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Electronic Acknowledgement Receipt	
EFS ID:	18496513
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Customer Number:	22442
Filer:	Brent Robert Lindon/Kathy Johnston
Filer Authorized By:	Brent Robert Lindon
Attorney Docket Number:	6890-93-CON
Receipt Date:	17-MAR-2014
Filing Date:	08-JUL-2012
Time Stamp:	16:29:16
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		Rule_312_Amendment.pdf	124470 b72f95d5d88bbe1cf214a03eeaa1a46b1da b0559	yes	9

WBRT003097

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Response After Final Action	1	1
	Claims	2	8
	Applicant Arguments/Remarks Made in an Amendment	9	9
Warnings:			
Information:			
	Total Files Size (in bytes):	124470	

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.

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)

22442 7590 12/26/2013
Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

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.

Kathy Johnston	(Depositor's name)
/Kathy Johnston/	(Signature)
March 25, 2014	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/543,866	07/08/2012	Melvyn Morris	6890-93-CON	7855

TITLE OF INVENTION: METHODS AND APPARATUS FOR DEALING WITH MALWARE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	03/26/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
DOAN, TRANG T	2431	726-024000

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 Sheridan Ross P.C.
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: PREVX LIMITED

(B) RESIDENCE: (CITY and STATE OR COUNTRY): UNITED KINGDOM

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 191970 (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
- ☒ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

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.

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.

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 /Brent R. Lindon/ Date March 25, 2014

Typed or printed name Brent R. Lindon Registration No. 67,424

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

WBRT003099

IPR2023-00633
Open Text Inc. EX-2018 - 302

Electronic Patent Application Fee Transmittal

Application Number:	13543866
Filing Date:	08-Jul-2012
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Filer:	Brent Robert Lindon/Kathy Johnston
Attorney Docket Number:	6890-93-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:				
Utility Appl Issue Fee	2501	1	480	480
Extension-of-Time:				

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

IPR2023-00633
Open Text Inc. EX-2018 - 304

Electronic Acknowledgement Receipt	
EFS ID:	18576215
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Customer Number:	22442
Filer:	Brent Robert Lindon/Kathy Johnston
Filer Authorized By:	Brent Robert Lindon
Attorney Docket Number:	6890-93-CON
Receipt Date:	25-MAR-2014
Filing Date:	08-JUL-2012
Time Stamp:	14:50:25
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	1069
Deposit Account	191970
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

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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	Issue Fee Payment (PTO-85B)	Issue_Fee_.pdf	81668 2600153acf83b65b12b91e9819fccde1be305a0b	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30480 72a10d2201e330c2ebb75db081854aa6e245c687	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	112148		

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

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

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

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

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/543,866	07/08/2012	Melvyn Morris	6890-93-CON	7855

22442 7590 03/26/2014

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
DOAN, TRANG T	
ART UNIT	PAPER NUMBER
2431	

NOTIFICATION DATE	DELIVERY MODE
03/26/2014	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):

e-docket@sheridanross.com

WBRT003104

IPR2023-00633
Open Text Inc. EX-2018 - 307

Response to Rule 312 Communication	Application No.	Applicant(s)
	13/543,866	MORRIS ET AL.
	Examiner	Art Unit
	TRANG DOAN	2431

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

1. ☒ The amendment filed on *17 March 2014* under 37 CFR 1.312 has been considered, and has been:

a) ☒ entered.

b) ☐ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.
Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

/CORDELIA ZECHER/ Supervisory Patent Examiner, Art Unit 2431	/TRANG DOAN/ Examiner, Art Unit 2431

WBRT003105

IPR2023-00633
Open Text Inc. EX-2018 - 308

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*				Application Number	13/543,866
				Filing Date	July 8, 2012
				First Named Inventor	Melvyn Morris
				Art Unit	2431
				Examiner Name	
Sheet	1	of	4	Attorney Docket Number	6890-93-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	6338141	01/08/2002	Wells	
	2	6772346	08/03/2004	Chess	
	3	6944772	09/13/2005	Dozortsev	
	4	7013483	03/14/2006	Cohen et al.	
	5	7093239	08/15/2006	van der Made	
	6	2001/0052014	12/13/2001	Sheymov et al.	
	7	2002/0099952	07/25/2002	Lambert et al.	
	8	2003/0023857	01/30/2003	Hinchlife	
	9	2003/0084323	05/01/2003	Gales	
	10	2003/0101381	05/29/2003	Mateev	
	11	2003/0135791	07/17/2003	Natvig	
	12	2004/0006704	01/08/2004	Dahlstrom	
	13	2004/0039921	02/26/2004	Chuang	
	14	2004/0068618	04/08/2004	Hooker	
	15	2004/0073810	04/15/2004	Racine	
	16	2004/0083408	04/29/2004	Spiegel	
	17	2004/0153644	08/05/2004	McCorkendale	
	18	2004/0255165	12/16/2004	Szor	
	19	2005/0021994	01/27/2005	Barton	
	20	2005/0027686	02/03/2005	Shipp	
	21	2005/0086500	04/21/2005	Albomoz	
	22	2005/0022014	~~06/27/2005~~	Shipman 1-2005	
Change(s) applied to document, /N.D.W./ 1/31/2014	23	2005/0210035	09/22/2005	Kester et al.	
	24	2007/0016953	01/18/2007	Morris et al.	
	25	2008/0209562	08/28/2008	Szor	
	26	2008/0320595	12/25/2008	van der Made	
	27	2009/0271867	10/29/2009	Zhang	
	28	2012/0278891	11/01/2012	Morris et al.	

Examiner Signature	/Cordelia Zecher/	Date Considered	03/14/2013

*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. /C.Z./

IPR2023-00633
Open Text Inc. EX-2018 - 309

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/543,866	05/13/2014	8726389	6890-93-CON	7855

22442 7590 04/23/2014

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

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):

Melvyn Morris, Turnditch, UNITED KINGDOM;
Paul Stubbs, Wyboston, UNITED KINGDOM;
Markus Hartwig, Milton Keynes, UNITED KINGDOM;
Darren Harter, Hucclecote, UNITED KINGDOM;

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.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
Approved for use through 11/30/2014. OMB 0651-0051
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	13/543,866
Filing Date	07-08-2012
First Named Inventor	Melvyn Morris
Title	METHODS AND APPARATUS FOR DEALING WITH MALWARE
Art Unit	2431
Examiner Name	DOAN, TRANG T
Attorney Docket Number	04584.0116USC1

SIGNATURE of Applicant or Patent Practitioner

Signature	/Andrew T. Pouzeshi/	Date (Optional)	2017-01-11
Name	Andrew T. Pouzeshi	Registration Number	67672
Title (if Applicant is a juristic entity)	Attorney for Applicant		
Applicant Name (if Applicant is a juristic entity)	Webroot Inc.		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 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.**

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IPR2023-00633
Open Text Inc. EX-2018 - 311

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 23552

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

	Firm or Individual Name				
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

WEBROOT INC.

☐ Inventor or Joint Inventor (title not required below)

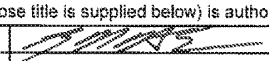
☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	May 12, 2014
Name	Ryan Howe		
Title	Associate General Counsel		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 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.**

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IPR2023-00633
Open Text Inc. EX-2018 - 312

PTO/SB/96 (07-09)
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STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: WEBROOT INC.

Application No./Patent No.: 8,726,389 Filed/Issue Date: 05-13-2014

Titled: METHODS AND APPARATUS FOR DEALING WITH MALWARE

WEBROOT INC. , a Corporation

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

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;

2. ☐ an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is _____ %); or

3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

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

1. From: Morris et al. To: PREVX LIMITED

The document was recorded in the United States Patent and Trademark Office at
Reel 035450 , Frame 0609 , or for which a copy thereof is attached.

2. From: PREVX LIMITED To: WEBROOT SOLUTIONS LTD

The document was recorded in the United States Patent and Trademark Office at
Reel 032991 , Frame 0418 , or for which a copy thereof is attached.

3. From: WEBROOT SOLUTIONS LTD To: WEBROOT INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 037886 , Frame 0085 , 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(b)(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.

/Andrew T. Pouzeshi/ 2017-01-11

Signature Date

Andrew T. Pouzeshi Attorney for Applicant

Printed or Typed Name Title

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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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:

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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 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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Open Text Inc. EX-2018 - 314

Electronic Acknowledgement Receipt	
EFS ID:	28031521
Application Number:	13543866
International Application Number:	
Confirmation Number:	7855
Title of Invention:	METHODS AND APPARATUS FOR DEALING WITH MALWARE
First Named Inventor/Applicant Name:	Melvyn Morris
Customer Number:	22442
Filer:	Andrew T. Pouzeshi/Elizabeth Pallardy
Filer Authorized By:	Andrew T. Pouzeshi
Attorney Docket Number:	6890-93-CON
Receipt Date:	11-JAN-2017
Filing Date:	08-JUL-2012
Time Stamp:	12:00:49
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	Application Data Sheet	04584_0116USC1_SuppADS.PDF	984472 d089369fd8aea0b866896673505fb92a17e8939a	no	5

Warnings:

WBRT003112

Information:					
This is not an USPTO supplied ADS fillable form					
2	Power of Attorney	04584_0116USC1_POA.PDF	359248 dc1dedf4a8bc671c25e4b2b7e0376d40798cc056	no	2
Warnings:					
Information:					
3	Assignee showing of ownership per 37 CFR 3.73	04584_0116USC1_373.PDF	429495 43e54fa2d508e4191a8dec6612e3c754644ba430	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1773215		

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/14 (11-08)
Approved for use through 04/30/2017. 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 contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	339000-000014
	Application Number	13/543,866
Title of Invention	METHODS AND APPARATUS FOR DEALING WITH MALWARE	

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.)

Applicant Information:

Applicant 1

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Melvyn		Morris	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Derbyshire	Country Of Residence	UK
Citizenship under 37 CFR 1.41(b)	GB		

Mailing Address of Applicant:

Address 1	Redmire Gap, Intake Lane		
Address 2	Turnditch		
City	Derbyshire	State/Province	
Postal Code	DE56 2LU	Country	UK

Applicant 2

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Paul		Stubbs	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Bedfordshire	Country Of Residence	UK
Citizenship under 37 CFR 1.41(b)	GB		

Mailing Address of Applicant:

Address 1	7 Rookery Road		
Address 2	Wyboston		
City	Bedfordshire	State/Province	
Postal Code	MK44 3AX	Country	UK

Applicant 3

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Markus		Hartwig	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Buckinghamshire	Country Of Residence	UK

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PTO/SB/14 (11-08)
Approved for use through 04/30/2017. 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 contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	339000-000014
	Application Number	13/543,866
Title of Invention	METHODS AND APPARATUS FOR DEALING WITH MALWARE	

Citizenship under 37 CFR 1.41(b)	DE		
Mailing Address of Applicant:			
Address 1	Exchange House, 494 Midsummer Boulevard		
Address 2	Milton Keynes		
City	Buckinghamshire	**State/Province**	
Postal Code	MK9 2EA	**Country**	UK

Applicant 4

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Darren		Harter	

Residence Information (Select One) ( ) US Residency (•) Non US Residency ( ) Active US Military Service

City	Gloucestershire	**Country Of Residence**	UK
Citizenship under 37 CFR 1.41(b)	GB		
Mailing Address of Applicant:			
Address 1	178 Barnwood Road, Hucclecote		
Address 2	Gloucester		
City	Gloucestershire	**State/Province**	
Postal Code	GL4 3JZ	**Country**	UK

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	~~47604~~ 23552		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	METHODS AND APPARATUS FOR DEALING WITH MALWARE		
Attorney Docket Number	~~339000-000014~~ 04584.0116USC1	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		**Sub Class (if any)**	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	3	**Suggested Figure for Publication (if any)**	1

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PTO/SB/14 (11-08)
Approved for use through 04/30/2017. 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 contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	339000-000014
	Application Number	13/543,866
Title of Invention	METHODS AND APPARATUS FOR DEALING WITH MALWARE	

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). Enter either 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	~~47604~~ 23552		

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(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	11477807	2006-06-30

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 benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. 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(a).

Remove

Application Number	Country[i]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
0513375.6	GB	2005-06-30	◉ Yes ○ No

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1

WBRT003116

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PTO/SB/14 (11-08)
Approved for use through 04/30/2017. 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 contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	339000-000014
	Application Number	13/543,866
Title of Invention	METHODS AND APPARATUS FOR DEALING WITH MALWARE	

If the Assignee is an Organization check here. ☒			
Organization Name	~~Prevx Limited~~ Webroot Inc.		
Mailing Address Information:			
Address 1	~~3 New Park Place~~ 385 Interlocken Crescent		
Address 2	~~Pride Park~~		
City	~~Derby~~ Broomfield	**State/Province**	CO
Country	~~UK~~ USA	Postal Code	DE24 8DZ 80021
Phone Number		Fax Number	
Email Address			
Additional Assignee Data may be generated within this form by selecting the **Add** button.			

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.					
Signature	/Andrew T. Pouzeshi/			Date (YYYY-MM-DD)	2017-01-11
First Name	Andrew T.	Last Name	Pouzeshi	Registration Number	67672

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 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.

WBRT003118

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UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/543,866	07/08/2012	Melvyn Morris	04584.0116USC1

CONFIRMATION NO. 7855

23552
MERCHANT & GOULD P.C.
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

POA ACCEPTANCE LETTER

OC000000088574873

Date Mailed: 01/23/2017

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 01/11/2017.

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**.

/ldvan/

WBRT003119

IPR2023-00633
Open Text Inc. EX-2018 - 322

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
13/543,866	07/08/2012	Melvyn Morris	6890-93-CON

CONFIRMATION NO. 7855

POWER OF ATTORNEY NOTICE

22442
Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

OC000000088574832

Date Mailed: 01/23/2017

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 01/11/2017.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

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**.

/ldvan/

IPR2023-00633
Open Text Inc. EX-2018 - 323

Large Entity Declaration

PATENT
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Number: 13/543,866 **Current Date: July 25, 2017**

Filing Date: July 8, 2012

Patent Number: 8,726,389

Issue Date: May 13, 2014

CHANGE OF ENTITY STATUS PURSUANT TO 37 C.F.R. §1.27 (g)(2)

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

Sir:

This communication hereby notifies the United States Patent and Trademark Office that small entity status is no longer applicable for the above-identified patent.

COMPANY or FIRM NAME AND ADDRESS:

Webroot Inc.
385 Interlocken Crescent, Suite 800
Broomfield, Colorado 80021

Respectfully submitted,

Signature
Ryan Howe
Printed Name
General Counsel
Title

OR
Reg. # if US Attorney_____