



UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ACKNOWLEDGEMENT OF LOSS OF ENTITLEMENT TO ENTITY STATUS DISCOUNT

APPLICATION #	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET #	REQUEST ID
14/021,585	09/09/2013	Philip John Steuart Gladstone	BST-003	133543

The entity status change request below filed through Patent Center on 12/05/2023 has been accepted.

Certifications

APPLICANT CHANGING TO REGULAR UNDISCOUNTED FEE STATUS

Signature

I certify, in accordance with 37 CFR 1.4(d)(4), that I am one of the signatories making the entity status change.

Signature	Name	Registration #
/Hunter Malboeuf/	Hunter Malboeuf	79730



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
14/021,585	09/09/2013	Philip John Steuart Gladstone	BST-003

CONFIRMATION NO. 3983

POWER OF ATTORNEY NOTICE



OC000000085416769

26161
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

Date Mailed: 08/30/2016

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/24/2016.

- The Power of Attorney to you in this application has been revoked by the applicant.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

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

/rmtturner myles/



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
14/021,585	09/09/2013	Philip John Steuart Gladstone	BST-003

CONFIRMATION NO. 3983

POA ACCEPTANCE LETTER



51414
GOODWIN PROCTER LLP
PATENT ADMINISTRATOR
100 Northern Avenue
BOSTON, MA 02210

Date Mailed: 08/30/2016

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/24/2016.

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.

/rmtturner myles/

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.

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/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	14/021,585		
Filing Date	September 9, 2013		
First Named Inventor	Philip J. Gladstone		
Title	SECURITY RISK MANAGEMENT		
Art Unit	2142		
Examiner Name	O. R. Abdul-Ali		
Attorney Docket Number	BST-003		
SIGNATURE of Applicant or Patent Practitioner			
Signature	/Joel E. Lehrer/	Date (Optional)	August 24, 2016
Name	Joel E. Lehrer	Registration Number	56,401
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			
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 <u>1</u> forms are submitted.		

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 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:

051414

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):

☒ 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)

Name

Tom Turner

Title

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 1 forms are submitted.

Electronic Acknowledgement Receipt

EFS ID:	26733061
Application Number:	14021585
International Application Number:	
Confirmation Number:	3983
Title of Invention:	SECURITY RISK MANAGEMENT
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone
Customer Number:	26161
Filer:	Joel E. Lehrer/Meghan Breault
Filer Authorized By:	Joel E. Lehrer
Attorney Docket Number:	38879-0004001
Receipt Date:	24-AUG-2016
Filing Date:	09-SEP-2013
Time Stamp:	17:25:45
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	Assignee showing of ownership per 37 CFR 3.73	BST-003_373c.pdf	72405	no	2
			c61bfc6fd1277d06b9eef7d57521c8d447e74430		

Warnings:

Information:					
2	Miscellaneous Incoming Letter	BST-003_Statement.pdf	76756	no	1
			c30a4fcae91630057545cec402b36d1ad8d02852		
Warnings:					
Information:					
3	Power of Attorney	BST-003_POA.pdf	927891	no	2
			06adde457d8aab3eb9d57ea686f7bc30750bc9ec		
Warnings:					
Information:					
Total Files Size (in bytes):			1077052		
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.					

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Philip J. Gladstone

Application No./Patent No.: 14/021,585 Filed/Issue Date: September 9, 2013

Titled: SECURITY RISK MANAGEMENT

BitSight Technologies, Inc., a _____
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

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

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____ (%). Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

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

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

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

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

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

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Philip John Steuart Gladstone To: BitSight Technologies, Inc.
The document was recorded in the United States Patent and Trademark Office at
Reel 031169, Frame 0094, 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.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

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

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

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

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

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

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

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

☐

Additional documents in the chain of title are listed on a supplemental sheet(s).

☒

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

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature /Joel E. Lehrer/_____
Date August 24, 2016_____
Printed or Typed Name Joel E. Lehrer_____
Title or Registration Number 56,401

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Philip J. Gladstone

Application No.: 14/021,585

Confirmation No.: 3983

Filed: September 9, 2013

Art Unit: 2142

For: SECURITY RISK MANAGEMENT

Examiner: O. R. Abdul-Ali

STATEMENT

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

Dear Sir:

Applicant hereby submits the Power of Attorney in the above-referenced patent application.

No fees are believed necessary for filing this Statement. However, if any fees are due, the Director is hereby authorized to charge such fees to our Deposit Account No. 07-1700, under Order No. BST-003.

Dated: August 24, 2016

Respectfully submitted,

Electronic signature: /Joel E. Lehrer/
Joel E. Lehrer
Registration No.: 56,401
GOODWIN PROCTER LLP
100 Northern Avenue
Boston, Massachusetts 02210
(617) 570-1000
Attorney for Applicant



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/021,585	09/06/2016	9438615	38879-0004001	3983

26161 7590 08/17/2016
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

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 282 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):

BitSight Technologies, Inc., Cambridge, MA
Philip John Steuart Gladstone, Carlisle, MA;
Alan Joseph Kirby, Hollis, NH;
John Matthew Truelove, Cambridge, MA;
David Feinzeig, Stoneham, MA;
Nagarjuna Venna, Waltham, MA;
Stephen Boyer, Waltham, MA;

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.

Issue Classification 	Application/Control No. 14021585	Applicant(s)/Patent Under Reexamination GLADSTONE ET AL.	
	Examiner OMAR ABDUL-ALI	Art Unit 2142	

CPC						
Symbol				Type	Version	
H04L		63		1433	F	2013-01-01
G06F		3		0484	I	2013-01-01
						
						
						
						
						
						
						
						
						
						
						
						
						

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version
				
				

NONE		Total Claims Allowed:	
		100	
(Assistant Examiner) /OMAR ABDUL-ALI/ Primary Examiner.Art Unit 2142	(Date) 8/03/2016	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	Claim 14	Fig. 6

Issue Classification 	Application/Control No. 14021585	Applicant(s)/Patent Under Reexamination GLADSTONE ET AL.
	Examiner OMAR ABDUL-ALI	Art Unit 2142

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		18	21	35	38	52	55	69	72	86	89	103		
	2	5	19	22	36	39	53	56	70	73	87	90	104		
	3	6	20	23	37	40	54	57	71	74	88	91	105		
	4	7	21	24	38	41	55	58	72	75	89	92	106		
	5	8	22	25	39	42	56	59	73	76	90	93	107		
	6	9	23	26	40	43	57	60	74	77	91	94	108		
	7	10	24	27	41	44	58	61	75	78	92	95	109		
	8	11	25	28	42	45	59	62	76	79	93	96	110		
	9	12	26	29	43	46	60	63	77	80	94	97	111		
	10	13	27	30	44	47	61	64	78	81	95	98	112		
	11	14	28	31	45	48	62	65	79	82	96	99	113		
	12	15	29	32	46	49	63	66	80	83	97	100	114		
	13	16	30	33	47	50	64	67	81	84	98				
1	14	17	31	34	48	51	65	68	82	85	99				
2	15	18	32	35	49	52	66	69	83	86	100				
3	16	19	33	36	50	53	67	70	84	87	101				
4	17	20	34	37	51	54	68	71	85	88	102				

NONE		Total Claims Allowed:	
		100	
(Assistant Examiner)	(Date)		
/OMAR ABDUL-ALI/ Primary Examiner.Art Unit 2142	8/03/2016	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	Claim 14	Fig. 6



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.
14/021,585	09/09/2013	Philip John Steuart Gladstone	38879-0004001	3983

26161 7590 08/09/2016
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER

ABDUL-ALI, OMAR R

ART UNIT	PAPER NUMBER
----------	--------------

2142

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

08/09/2016

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):

PATDOCTC@fr.com

Notice of Allowability	Application No. 14/021,585	Applicant(s) GLADSTONE ET AL.	
	Examiner OMAR ABDUL-ALI	Art Unit 2142	AIA (First Inventor to File) Status Yes

-- 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 printer rush dated 7/13/2016.
☐ 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 14-17 and 19-114. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

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

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

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

/OMAR ABDUL-ALI/
Primary Examiner, Art Unit 2142

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Claim 34 (Amended): The method of claim 32 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry. [[,]]

Claim 51 (Amended): The method of claim 50 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry. [[,]]

Claim 68: (Amended): The method of claim 67 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry. [[,]]

Claim 85: (Amended): The method of claim 84 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry. [[,]]

Claim 102: (Amended): The method of claim 99 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry. [[,]]

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMAR ABDUL-ALI whose telephone number is (571)270-1694. The examiner can normally be reached on Monday-Friday 10:30-7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ajay Bhatia can be reached on 571-272-3906. 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.

Application/Control Number: 14/021,585
Art Unit: 2142

Page 4

/OMAR ABDUL-ALI/
Primary Examiner, Art Unit 2142

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)

26161 7590 7/11/2016

FISH & RICHARDSON P.C.
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

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.
-----------------	-------------	----------------------	---------------------	------------------

14/021,585

09/09/2013

Philip John Steuart Gladstone

38879-0004001

3983

TITLE OF INVENTION: SECURITY RISK MANAGEMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
-------------	---------------	---------------	---------------------	----------------------	------------------	----------

nonprovisional

SMALL

\$480

\$0

\$480

10/11/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
----------	----------	----------------

ABDUL-ALI, OMAR R.

2142

715-771000

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,

1 Fish & Richardson P.C.

(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.

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

BitSight Technologies, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Cambridge, MA

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 in the amount of the fee(s) is enclosed.

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

☒ The Director is hereby authorized to charge the required fee(s), or credit any overpayment, to Deposit Account Number 06-1050

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 form 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.

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

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

Authorized Signature /David L. Feigenbaum/

Date July 12, 2016

Typed or printed name David L. Feigenbaum

Registration No. 30,378

Electronic Patent Application Fee Transmittal

Application Number:	14021585			
Filing Date:	09-Sep-2013			
Title of Invention:	SECURITY RISK MANAGEMENT			
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone			
Filer:	David L Feigenbaum/jennifer franco			
Attorney Docket Number:	38879-0004001			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	2501	1	480	480

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

Electronic Acknowledgement Receipt

EFS ID:	26329408
Application Number:	14021585
International Application Number:	
Confirmation Number:	3983
Title of Invention:	SECURITY RISK MANAGEMENT
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone
Customer Number:	26161
Filer:	David L Feigenbaum/Renee Neuman
Filer Authorized By:	David L Feigenbaum
Attorney Docket Number:	38879-0004001
Receipt Date:	12-JUL-2016
Filing Date:	09-SEP-2013
Time Stamp:	17:54:29
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$480
RAM confirmation Number	071316INTEFSW00004680061050
Deposit Account	061050
Authorized User	Renee Neuman

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

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Post Allowance Communication - Incoming	response.pdf	64484	no	2
			81f2e95db1477b316ebd05ea2da032b87c bfac83		
Warnings:					
Information:					
2	Issue Fee Payment (PTO-85B)	transmittal.pdf	107593	no	1
			29e421e8205f549cd65ae8c501e73422f6bf 2aa0		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30711	no	2
			e7a2aa5b0b899dc311c2c2b76d74e882195 83857		
Warnings:					
Information:					
Total Files Size (in bytes):			202788		
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

First Named Inventor : Philip John Steuart Art Unit : 2142
 Gladstone Examiner : Omar R. Abdul-Ali
Serial No. : 14/021,585 Confirmation No. : 3983
Filed : September 9, 2013 Notice of Allowance Date: July 11, 2016

Title : SECURITY RISK MANAGEMENT

MAIL STOP ISSUE FEE

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

REPLY TO NOTICE OF ALLOWANCE DATED JULY 11, 2016

\$480 for the issue fee is being paid with this reply and the fee transmittal on the Electronic Filing System. Apply those fees and any other necessary charges or credits to deposit account 06 1050, referencing the above attorney docket number.

COMMENTS ON EXAMINER'S REASONS FOR ALLOWANCE

The applicant believes that the allowed claims should read 14-17 and 19-114. Claim 18 was canceled in the amendment filed on March 29, 2016.

The applicant does not concede (1) that the examiner's stated reasons for allowance are the only reasons for which the claims are patentable, (2) that the limitations identified by the examiner are necessary to the patentability of the claims, (3) that the examiner's interpretation of the claims may not be incorrect, (4) that the examiner's reasons bear on the patentability of claims in any other patent applications, (5) that although the reasons may have indicated that individual claim elements were not described or made obvious by the prior art, the claims may not be patentable for other reasons as well, including the combination of all of the elements recited in each of the claims, (6) that each dependent claim may not be patentable based on a combination of features recited in the dependent claim and its base claim(s), even though those features do not include all of the limitations identified in the examiner's reasons for allowance, or (7) that other claims, including claims that are broader or narrower than the ones allowed, are not also patentable (and the applicant reserves the right to pursue such claims in other patent applications, including applications that are entitled to the priority date of this application.)

First Named Inventor : Philip John Steuart Gladstone
Serial No. : 14/021,585
Filed : September 9, 2013
Page : 2 of 2

Attorney's Docket No.: 38879-0004001

Respectfully submitted,

Date: 7/12/16/_____

/David L. Feigenbaum/_____
David L. Feigenbaum
Reg. No. 30,378

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

23543753.doc



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

26161 7590 07/11/2016
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER

ABDUL-ALI, OMAR R

ART UNIT

PAPER NUMBER

2142

DATE MAILED: 07/11/2016

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

14/021,585

09/09/2013

Philip John Steuart Gladstone

38879-0004001

3983

TITLE OF INVENTION: SECURITY RISK MANAGEMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	10/11/2016

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

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

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

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

PART B - FEE(S) TRANSMITTAL

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

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

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

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.

26161 7590 07/11/2016
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

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.
14/021,585	09/09/2013	Philip John Steuart Gladstone	38879-0004001	3983

TITLE OF INVENTION: SECURITY RISK MANAGEMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	10/11/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
ABDUL-ALI, OMAR R	2142	715-771000

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, 1 _____ (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. 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
☐ 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 _____ Date _____
 Typed or printed name _____ Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/021,585	09/09/2013	Philip John Steuart Gladstone	38879-0004001	3983

26161 7590 07/11/2016
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER

ABDUL-ALI, OMAR R

ART UNIT PAPER NUMBER

2142

DATE MAILED: 07/11/2016

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

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

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

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

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

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

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

Privacy Act Statement

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

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

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

Notice of Allowability	Application No. 14/021,585	Applicant(s) GLADSTONE ET AL.	
	Examiner OMAR ABDUL-ALI	Art Unit 2142	AIA (First Inventor to File) Status Yes

-- 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 amendment filed March 29, 2016.
☐ 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 14-114. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

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

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. ☐ Notice of References Cited (PTO-892) | 5. ☒ Examiner's Amendment/Comment |
| 2. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>3/16</u> | 6. ☒ Examiner's Statement of Reasons for Allowance |
| 3. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 7. ☐ Other _____. |
| 4. ☒ Interview Summary (PTO-413),
Paper No./Mail Date <u>20160628</u> . | |

/OMAR ABDUL-ALI/
Primary Examiner, Art Unit 2142

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David Feigenbaum on 6/28/2016.

The application has been amended as follows:

Claim 16. (Amended) The method of ~~[[any of]]~~ claim 15 in which the network-related information comprises at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server configurations, domain names, social media handles, third-party data hosting, internet service providers, Domain Name System services, Autonomous System numbers, and Border Gateway Protocol advertisements.

Claim 110. (Amended) The method of claim ~~[[84]]~~ **98** in which the tool enables the user to assign a technical asset to an entity.

Claim 111. (Amended) The method of claim ~~[[84]]~~ **98** comprising invoking external crowd-sourced services to aid in generating the map.

Claim 112. (Amended) The method of claim ~~[[84]]~~ **98** comprising enabling a separate review and approval of entities proposed to be included in the map.

Claim 113. (Amended) The method of claim ~~[[84]]~~ **98** comprising providing the map to an application for joining to event data or scoring the security state of the entities.

Claim 114. (Amended) The method of claim ~~[[84]]~~ **98** in which the part of the generating of the map that is done automatically comprises at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map.

Allowable Subject Matter

2. The following is an examiner's statement of reasons for allowance: The recitations of the specific features of the methods in Claims 14, 32, 47, 64, 81, and 98 including generating a map between technical assets that contribute to security characteristics of respective entities and the identities of the entities that are associated with the respective technical assets, the generating of the map comprising online discovery of information about the technical assets, enabling a user to associate the technical assets with the identities of the entities, wherein information about the technical assets is discovered from an Internet Assigned Numbers Authority or Regional Internet Registry (Claim 14) is not taught nor is fairly suggested by the prior art of record. For Claim 32, the information being discovered through passive DNS queries is

Art Unit: 2142

not taught by the prior art in the context of the invention. For Claim 47, invoking external crowd-sourced services to aid in generating the map is not taught nor is fairly suggested by the prior art. In Claim 64, enabling a separate review and approval of entities proposed to be included in the map is not taught nor is fairly suggested by the prior art. In Claim 81, providing the map to an application for joining the event data or scoring the security state of the entities is not taught nor is fairly suggested by the prior art of record. In Claim 98, generating graphs of relationships among entities based on their associations with technical assets is not taught nor is fairly suggested by the prior art.

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

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMAR ABDUL-ALI whose telephone number is (571)270-1694. The examiner can normally be reached on Monday-Friday 10:30-7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ajay Bhatia can be reached on 571-272-3906. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2142

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.

/OMAR ABDUL-ALI/
Primary Examiner, Art Unit 2142

U.S. Patent and Trademark Office
PTOL-413B (Rev. 8/11/2010)

Interview Summary

Paper No. 20160628

Black Kite Ex. 1002, Page 36 of 232

Issue Classification 	Application/Control No. 14021585	Applicant(s)/Patent Under Reexamination GLADSTONE ET AL.	
	Examiner OMAR ABDUL-ALI	Art Unit 2142	

CPC						
Symbol					Type	Version
H04L		63		1433	F	2013-01-01
G06F		3		0484	I	2013-01-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version

NONE		Total Claims Allowed:	
		101	
(Assistant Examiner) /OMAR ABDUL-ALI/ Primary Examiner.Art Unit 2142 (Primary Examiner)	(Date) 6/28/2016 (Date)	O.G. Print Claim(s) Claim 14	O.G. Print Figure Fig. 6

Issue Classification 	Application/Control No. 14021585	Applicant(s)/Patent Under Reexamination GLADSTONE ET AL.
	Examiner OMAR ABDUL-ALI	Art Unit 2142

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1	4	17	20	33	36	49	52	65	68	81	84	97	100	113
	2	5	18	21	34	37	50	53	66	69	82	85	98	101	114
	3	6	19	22	35	38	51	54	67	70	83	86	99		
	4	7	20	23	36	39	52	55	68	71	84	87	100		
	5	8	21	24	37	40	53	56	69	72	85	88	101		
	6	9	22	25	38	41	54	57	70	73	86	89	102		
	7	10	23	26	39	42	55	58	71	74	87	90	103		
	8	11	24	27	40	43	56	59	72	75	88	91	104		
	9	12	25	28	41	44	57	60	73	76	89	92	105		
	10	13	26	29	42	45	58	62	74	77	90	93	106		
	11	14	27	30	43	46	59	62	75	78	91	94	107		
	12	15	28	31	44	47	60	63	76	79	92	95	108		
	13	16	29	32	45	48	61	64	77	80	93	96	109		
1	14	17	30	33	46	49	62	65	78	81	94	97	110		
2	15	18	31	34	47	50	63	66	79	82	95	98	111		
3	16	19	32	35	48	51	64	67	80	83	96	99	112		

NONE		Total Claims Allowed:	
		101	
(Assistant Examiner)	(Date)		
/OMAR ABDUL-ALI/ Primary Examiner.Art Unit 2142	6/28/2016	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	Claim 14	Fig. 6



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

BIB DATA SHEET

CONFIRMATION NO. 3983

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.		
14/021,585	09/09/2013	715	2142	38879-0004001		
APPLICANTS BitSight Technologies, Inc., Cambridge, MA INVENTORS Philip John Steuart Gladstone, Carlisle, MA; Alan Joseph Kirby, Hollis, NH; John Matthew Truelove, Cambridge, MA; David Feinzeig, Stoneham, MA; Nagarjuna Venna, Waltham, MA; Stephen Boyer, Waltham, MA; ** CONTINUING DATA ***** ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 09/24/2013						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and Acknowledged <u>/OMAR R ABDUL-ALI/</u> Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY MA	SHEETS DRAWINGS 16	TOTAL CLAIMS 31	INDEPENDENT CLAIMS 2
ADDRESS FISH & RICHARDSON P.C. (BO) P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022 UNITED STATES						
TITLE SECURITY RISK MANAGEMENT						
FILING FEE RECEIVED 1170	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit		

Search Notes 	Application/Control No. 14021585	Applicant(s)/Patent Under Reexamination GLADSTONE ET AL.
	Examiner OMAR ABDUL-ALI	Art Unit 2142

CPC- SEARCHED		
Symbol	Date	Examiner
H04L63/1433	3/07/2016	OAA
G06F3/0484	3/07/2016	OAA

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Performed EAST search (USPAT, US-PGPUB)	3/07/2016	OAA
Performed updated EAST search (USPAT, US-PGPUB)	6/28/2016	OAA

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
H04L	63/1433 (USPAT, US-PGPUB)	6/28/2016	OAA
G06F	3/0484 (USPAT, US-PGPUB)	6/28/2016	OAA

--	--

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	(h04l63/1433 or g06f3/0484) and technical asset with identity same security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/06/28 16:21
S1	0	generat\$3 near2 map with technical asset with security characteristic	US-PGPUB; USPAT	ADJ	OFF	2016/02/11 17:19
S2	1	generat\$3 near2 map with technical asset with security characteristic	US-PGPUB; USPAT	ADJ	ON	2016/02/11 17:20
S3	1	map with technical asset with security characteristic	US-PGPUB; USPAT	ADJ	ON	2016/02/11 17:22
S4	0	map with technical asset with security characteristic and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/02/11 17:22
S5	0	map with technical asset near2 entity with security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/02/11 17:24
S6	0	technical asset near2 entity with security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/02/11 17:25
S7	1	("20040250122").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/02/23 18:53
S8	0	technical asset with numbers authority and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 03:20
S9	13	discover\$3 with numbers authority and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 03:20
S10	1	technical asset with security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 03:56
S11	0	technical asset with identity same security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 03:58
S12	0	technical asset with map and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 03:58
S13	1	("20040250122").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/03/07 09:38
S14	1	("20060212925").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/03/07 10:14
S15	1	("20040193918").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/03/07 10:15
S16	0	network security with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:16
S17	1	security with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:16
S18	1	"14021585"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:28
S19	0	employee count with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:30

S20	24	employee count with entity and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:31
S21	2	(entit\$3 with technical asset) and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:33
S22	1218	(entity or entities) with asset same security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:34
S23	18	(entity or entities) with asset with identity same security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:35
S24	41	(entity or entities) with asset near2 data same security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:38
S25	0	map with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:41
S26	0	map\$4 with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:41
S27	1	technical asset with (ip address or mail server or domain name or network related) and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:42
S28	22	iana with tag and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:03
S29	9	iana with asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:06
S30	35	(iana or regional internet registry) with discover\$3 and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:07
S31	0	(iana or regional internet registry) with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:08
S32	9	(iana or regional internet registry) with asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:08
S33	1	dns quer\$3 with asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:12
S34	0	crowd source with entity with map and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:20
S35	0	crowd source with entity with security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:20
S36	12	approval with tag with asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:25
S37	0	review with technical asset with (map or tag) and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:27
S38	17	event data with security state and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:27
S39	4	event data with security state with application and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:28
S40	0	(h04l63/1433 or g06f3/0484) and technical asset with identity same security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:52

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	9	("20030212925" "20040221296" "20050080720" "20080140495" "20120166458" "5867799" "6016475" "7100195" "7748038").PN.	US-PGPUB; USPAT	ADJ	ON	2016/06/28 16:23

C:\Users\oali\Documents\EAST\Workspaces\14021585.wsp

Sheet 1 of 1

Substitute Disclosure Form U.S. Department of Commerce Patent and Trademark Office Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	Attorney Docket No. 38879-0004001	Application No. 14/021,585
	Applicant BitSight Technologies, Inc.	
	Filing Date September 9, 2013	Group Art Unit 2142

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1.	2006/0212925	09-2006	Shull et al.			
	2.	2012/0166458	06-2012	Laudanski et al.			
	3.	2008/0140495	06-2008	Bhamidipaty et al.			
	4.	5,867,799	02-1999	Lang			
	5.	6,016,475	01-2000	Miller			
	6.	7,100,195	08-2006	Underwood			
	7.	2012/0166458	06-2012	Laudanski			
	8.	2005/0080720	04-2005	Betz			
	9.	2004/0221296	11-2004	Ogielski			
	10.	7,748,038	06-2010	Olivier			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	11.	PAIR transaction history of US application no. 13/240,572 and pending claims as of March 22, 2016.
	12.	PAIR transaction history of US application no. 14/944,484 and pending claims as of March 22, 2016.

Examiner Signature /OMAR R ABDUL-ALI/	Date Considered 06/28/2016
--	-------------------------------

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

Black Kite Ex. 1002, Page 45 of 232

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.R.A/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor :	Philip John Steuart	Art Unit :	2142
	Gladstone	Examiner :	Omar R. Abul-Ali
Serial No. :	14/021,585	Conf. No. :	3983
Filed :	September 9, 2013		
Title :	SECURITY RISK MANAGEMENT		

Mail Stop Amendment

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

REPLY TO ACTION DATED MARCH 11, 2016

List of claims (replacing prior versions):

1. (withdrawn) A method comprising:
receiving traces of activities of an online user who is associated with an entity; and
inferring by analysis of the traces a security state of the entity.
2. (withdrawn) The method of claim 1 in which the traces indicate successful attacks on computer systems of the entity.
3. (withdrawn) The method of claim 1 comprising distinguishing between traces that represent a less satisfactory security state of the entity and traces that represent a more satisfactory security state of the entity.
4. (withdrawn) The method of claim 1 in which the analysis comprises a comparison of traces that originated in different contexts of the user's online activities.
5. (withdrawn) The method of claim 4 in which the different contexts comprise different times.
6. (withdrawn) The method of claim 5 in which the traces that originated at one of the times reflect a user deletion relative to the traces that originated at an earlier time.
7. (withdrawn) The method of claim 6 in which the traces that originated at one of the times reflect a user deletion of malicious data or code relative to the traces at the earlier time.
8. (withdrawn) The method of claim 4 in which the different contexts comprise a context the security of which is controlled by the entity and a context the security of which is at least partly uncontrolled by the entity.
9. (withdrawn) The method of claim 8 in which the controlled context comprises a computer system or device made accessible by the entity to the user, and the partly uncontrolled context comprises a computer system or device owned by the user.
10. (withdrawn) The method of claim 4 in which the traces comprise tracking of an identity of the online user between two of the different contexts.
11. (withdrawn) The method of claim 10 in which the tracking comprises cookies associated with advertising directed to the online user.

12. (withdrawn) The method of claim 1 in which the traces comprise indications of security checks made with respect to communications associated with the user.

13. (withdrawn) The method of claim 12 in which the security checks comprise indications of whether email messages conform to DomainKeys Identified Mail standards or email domains conform to Sender Policy Framework.

14. (currently amended) A method comprising:

generating a map between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets, at least part of the generating of the map being done automatically, generating of the map comprising online discovery of information about the technical assets; and

enabling a user to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities,

the technical assets comprising network-related information, and in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or Regional Internet Registry.

15. (original) The method of claim 14 in which the technical assets comprise network-related information.

16. (original) The method of any of claim 15 in which the network-related information comprises at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server configurations, domain names, social media handles, third-party data hosting, internet service providers, Domain Name System services, Autonomous System numbers, and Border Gateway Protocol advertisements.

17. (original) The method of claim 15 in which generating the map comprises online discovery of information about the technical assets.

18. (canceled) The method of claim 17 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry.

19. (original) The method of claim 17 in which the information about the technical assets is discovered through passive DNS queries.

20. (original) The method of claim 19 comprising identifying from the passive DNS queries associations between domain names and network addresses.

21. (original) The method of claim 20 comprising tracking changes over time in the network addresses that are associated with a given domain name.

22. (original) The method of claim 20 in which identifying from the passive DNS queries associations between domain names and network addresses comprises:

receiving a first domain name for an entity from the entities;

sending a first passive DNS query to identify first name servers for the first domain name;

receiving a list of the first name servers for the first domain;

sending a second passive DNS query, for each of the first name servers, to identify second domain names for which the name server is authoritative;

receiving a list, for each of the first name servers, of the second domain names for which the name server is authoritative;

sending a third passive DNS query, for each of the second domain names, to identify host names for the hosts of the second domain name and Internet Protocol addresses for the host names;

receiving a list of the host names and the Internet Protocol addresses for the host names; and

mapping each of the Internet Protocol addresses to an attribute for the entity.

23. (original) The method of claim 14 comprising presenting to the user non-technical-asset information through the user interface.

24. (original) The method of claim 23 in which the non-technical-asset information comprises information about the entities.

25. (original) The method of claim 24 in which the information about the entities comprises at least one of descriptions of entities, industry classifications, and employee counts.

26. (original) The method of claim 14 in which the tool enables the user to assign a technical asset to an entity.

27. (original) The method of claim 14 comprising invoking external crowd-sourced services to aid in generating the map.

28. (original) The method of claim 14 comprising enabling a separate review and approval of entities proposed to be included in the map.

29. (original) The method of claim 14 comprising providing the map to an application for joining to event data or scoring the security state of the entities.

30. (original) The method of claim 14 in which the part of the generating of the map that is done automatically comprises at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map.

31. (original) The method of claim 14 comprising generating graphs of relationships among entities based on their associations with technical assets.

32. (new) A method comprising:

generating a map between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets, at least part of the generating of the map being done automatically, the technical assets comprising network-related information, the generating of the map comprising online discovery of information about the technical assets, the information about the technical assets being discovered through passive DNS queries; and

enabling a user to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities.

33. (new) The method of any of claim 32 in which the network-related information comprises at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server

configurations, domain names, social media handles, third-party data hosting, internet service providers, Domain Name System services, Autonomous System numbers, and Border Gateway Protocol advertisements.

34. (new) The method of claim 32 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry,

35. (new) The method of claim 32 comprising identifying from the passive DNS queries associations between domain names and network addresses.

36. (new) The method of claim 35 comprising tracking changes over time in the network addresses that are associated with a given domain name.

37. (new) The method of claim 35 in which identifying from the passive DNS queries associations between domain names and network addresses comprises:

receiving a first domain name for an entity from the entities;

sending a first passive DNS query to identify first name servers for the first domain name;

receiving a list of the first name servers for the first domain;

sending a second passive DNS query, for each of the first name servers, to identify second domain names for which the name server is authoritative;

receiving a list, for each of the first name servers, of the second domain names for which the name server is authoritative;

sending a third passive DNS query, for each of the second domain names, to identify host names for the hosts of the second domain name and Internet Protocol addresses for the host names;

receiving a list of the host names and the Internet Protocol addresses for the host names;
and

mapping each of the Internet Protocol addresses to an attribute for the entity.

38. (new) The method of claim 32 comprising presenting to the user non-technical-asset information through the user interface.

39. (new) The method of claim 38 in which the non-technical-asset information comprises information about the entities.

40. (new) The method of claim 39 in which the information about the entities comprises at least one of descriptions of entities, industry classifications, and employee counts.

41. (new) The method of claim 32 in which the tool enables the user to assign a technical asset to an entity.

42. (new) The method of claim 32 comprising invoking external crowd-sourced services to aid in generating the map.

43. (new) The method of claim 32 comprising enabling a separate review and approval of entities proposed to be included in the map.

44. (new) The method of claim 32 comprising providing the map to an application for joining to event data or scoring the security state of the entities.

45. (new) The method of claim 32 in which the part of the generating of the map that is done automatically comprises at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map.

46. (new) The method of claim 32 comprising generating graphs of relationships among entities based on their associations with technical assets.

47. (new) A method comprising:

generating a map between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets, at least part of the generating of the map being done automatically,

invoking external crowd-sourced services to aid in generating the map; and

enabling a user to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities.

48. (new) The method of claim 47 in which the technical assets comprise network-related information.

49. (new) The method of any of claim 48 in which the network-related information comprises at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server configurations, domain names, social media handles, third-party data hosting, internet service providers, Domain Name System services, Autonomous System numbers, and Border Gateway Protocol advertisements.

50. (new) The method of claim 48 in which generating the map comprises online discovery of information about the technical assets.

51. (new) The method of claim 50 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry,

52. (new) The method of claim 50 in which the information about the technical assets is discovered through passive DNS queries.

53. (new) The method of claim 52 comprising identifying from the passive DNS queries associations between domain names and network addresses.

54. (new) The method of claim 53 comprising tracking changes over time in the network addresses that are associated with a given domain name.

55. (new) The method of claim 53 in which identifying from the passive DNS queries associations between domain names and network addresses comprises:

receiving a first domain name for an entity from the entities;

sending a first passive DNS query to identify first name servers for the first domain name;

receiving a list of the first name servers for the first domain;

sending a second passive DNS query, for each of the first name servers, to identify second domain names for which the name server is authoritative;

receiving a list, for each of the first name servers, of the second domain names for which the name server is authoritative;

sending a third passive DNS query, for each of the second domain names, to identify host names for the hosts of the second domain name and Internet Protocol addresses for the host names;

receiving a list of the host names and the Internet Protocol addresses for the host names; and

mapping each of the Internet Protocol addresses to an attribute for the entity.

56. (new) The method of claim 47 comprising presenting to the user non-technical-asset information through the user interface.

57. (new) The method of claim 56 in which the non-technical-asset information comprises information about the entities.

58. (new) The method of claim 57 in which the information about the entities comprises at least one of descriptions of entities, industry classifications, and employee counts.

59. (new) The method of claim 47 in which the tool enables the user to assign a technical asset to an entity.

60. (new) The method of claim 47 comprising enabling a separate review and approval of entities proposed to be included in the map.

61. (new) The method of claim 47 comprising providing the map to an application for joining to event data or scoring the security state of the entities.

62. (new) The method of claim 47 in which the part of the generating of the map that is done automatically comprises at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map.

63. (new) The method of claim 47 comprising generating graphs of relationships among entities based on their associations with technical assets.

64. (new) A method comprising:

generating a map between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets, at least part of the generating of the map being done automatically,

enabling a separate review and approval of entities proposed to be included in the map, and

enabling a user to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities.

65. (new) The method of claim 64 in which the technical assets comprise network-related information.

66. (new) The method of any of claim 65 in which the network-related information comprises at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server configurations, domain names, social media handles, third-party data hosting, internet service providers, Domain Name System services, Autonomous System numbers, and Border Gateway Protocol advertisements.

67. (new) The method of claim 64 in which generating the map comprises online discovery of information about the technical assets.

68. (new) The method of claim 67 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry,

69. (new) The method of claim 67 in which the information about the technical assets is discovered through passive DNS queries.

70. (new) The method of claim 69 comprising identifying from the passive DNS queries associations between domain names and network addresses.

71. (new) The method of claim 70 comprising tracking changes over time in the network addresses that are associated with a given domain name.

72. (new) The method of claim 70 in which identifying from the passive DNS queries associations between domain names and network addresses comprises:

receiving a first domain name for an entity from the entities;

sending a first passive DNS query to identify first name servers for the first domain name;

receiving a list of the first name servers for the first domain;

sending a second passive DNS query, for each of the first name servers, to identify second domain names for which the name server is authoritative;

receiving a list, for each of the first name servers, of the second domain names for which the name server is authoritative;

sending a third passive DNS query, for each of the second domain names, to identify host names for the hosts of the second domain name and Internet Protocol addresses for the host names;

receiving a list of the host names and the Internet Protocol addresses for the host names; and

mapping each of the Internet Protocol addresses to an attribute for the entity.

73. (new) The method of claim 64 comprising presenting to the user non-technical-asset information through the user interface.

74. (new) The method of claim 73 in which the non-technical-asset information comprises information about the entities.

75. (new) The method of claim 74 in which the information about the entities comprises at least one of descriptions of entities, industry classifications, and employee counts.

76. (new) The method of claim 64 in which the tool enables the user to assign a technical asset to an entity.

77. (new) The method of claim 64 comprising invoking external crowd-sourced services to aid in generating the map.

78. (new) The method of claim 64 comprising providing the map to an application for joining to event data or scoring the security state of the entities.

79. (new) The method of claim 64 in which the part of the generating of the map that is done automatically comprises at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map.

80. (new) The method of claim 64 comprising generating graphs of relationships among entities based on their associations with technical assets.

81. (new) A method comprising:

generating a map between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets, at least part of the generating of the map being done automatically,

providing the map to an application for joining to event data or scoring the security state of the entities; and

enabling a user to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities.

82. (new) The method of claim 81 in which the technical assets comprise network-related information.

83. (new) The method of any of claim 82 in which the network-related information comprises at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server configurations, domain names, social media handles, third-party data hosting, internet service providers, Domain Name System services, Autonomous System numbers, and Border Gateway Protocol advertisements.

84. (new) The method of claim 82 in which generating the map comprises online discovery of information about the technical assets.

85. (new) The method of claim 84 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry,

86. (new) The method of claim 84 in which the information about the technical assets is discovered through passive DNS queries.

87. (new) The method of claim 86 comprising identifying from the passive DNS queries associations between domain names and network addresses.

88. (new) The method of claim 87 comprising tracking changes over time in the network addresses that are associated with a given domain name.

89. (new) The method of claim 87 in which identifying from the passive DNS queries associations between domain names and network addresses comprises:

receiving a first domain name for an entity from the entities;

sending a first passive DNS query to identify first name servers for the first domain name;

receiving a list of the first name servers for the first domain;

sending a second passive DNS query, for each of the first name servers, to identify second domain names for which the name server is authoritative;

receiving a list, for each of the first name servers, of the second domain names for which the name server is authoritative;

sending a third passive DNS query, for each of the second domain names, to identify host names for the hosts of the second domain name and Internet Protocol addresses for the host names;

receiving a list of the host names and the Internet Protocol addresses for the host names; and

mapping each of the Internet Protocol addresses to an attribute for the entity.

90. (new) The method of claim 81 comprising presenting to the user non-technical-asset information through the user interface.

91. (new) The method of claim 90 in which the non-technical-asset information comprises information about the entities.

92. (new) The method of claim 91 in which the information about the entities comprises at least one of descriptions of entities, industry classifications, and employee counts.

93. (new) The method of claim 81 in which the tool enables the user to assign a technical asset to an entity.

94. (new) The method of claim 81 comprising invoking external crowd-sourced services to aid in generating the map.

95. (new) The method of claim 81 comprising enabling a separate review and approval of entities proposed to be included in the map.

96. (new) The method of claim 81 in which the part of the generating of the map that is done automatically comprises at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map.

97. (new) The method of claim 81 comprising generating graphs of relationships among entities based on their associations with technical assets.

98. (new) A method comprising:

generating a map between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets, at least part of the generating of the map being done automatically,

generating graphs of relationships among entities based on their associations with technical assets; and

enabling a user to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities.

99. (new) The method of claim 98 in which the technical assets comprise network-related information.

100. (new) The method of any of claim 99 in which the network-related information comprises at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server configurations, domain names, social media handles, third-party data hosting, internet service providers, Domain Name System services, Autonomous System numbers, and Border Gateway Protocol advertisements.

101. (new) The method of claim 99 in which generating the map comprises online discovery of information about the technical assets.

102. (new) The method of claim 99 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry,

103. (new) The method of claim 101 in which the information about the technical assets is discovered through passive DNS queries.

104. (new) The method of claim 103 comprising identifying from the passive DNS queries associations between domain names and network addresses.

105. (new) The method of claim 104 comprising tracking changes over time in the network addresses that are associated with a given domain name.

106. (new) The method of claim 104 in which identifying from the passive DNS queries associations between domain names and network addresses comprises:

receiving a first domain name for an entity from the entities;

sending a first passive DNS query to identify first name servers for the first domain name;

receiving a list of the first name servers for the first domain;

sending a second passive DNS query, for each of the first name servers, to identify second domain names for which the name server is authoritative;

receiving a list, for each of the first name servers, of the second domain names for which the name server is authoritative;

sending a third passive DNS query, for each of the second domain names, to identify host names for the hosts of the second domain name and Internet Protocol addresses for the host names;

receiving a list of the host names and the Internet Protocol addresses for the host names;
and

mapping each of the Internet Protocol addresses to an attribute for the entity.

107. (new) The method of claim 98 comprising presenting to the user non-technical-asset information through the user interface.

108. (new) The method of claim 107 in which the non-technical-asset information comprises information about the entities.

109. (new) The method of claim 108 in which the information about the entities comprises at least one of descriptions of entities, industry classifications, and employee counts.

110. (new) The method of claim 81 in which the tool enables the user to assign a technical asset to an entity.

111. (new) The method of claim 81 comprising invoking external crowd-sourced services to aid in generating the map.

112. (new) The method of claim 81 comprising enabling a separate review and approval of entities proposed to be included in the map.

113. (new) The method of claim 81 comprising providing the map to an application for joining to event data or scoring the security state of the entities.

114. (new) The method of claim 81 in which the part of the generating of the map that is done automatically comprises at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map.

First Named Inventor : Philip John Steuart Gladstone
Serial No. : 14/021,585
Filed : September 9, 2013
Page : 17 of 17

Attorney's Docket No.: 38879-0004001

REMARKS

The comments of the applicant below are each preceded by related comments of the examiner (in small, bold type).

4. Claims 18-22 and 27-29, and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The claims have been rewritten and all of the remaining claims are believed to be patentable.

All of the dependent claims are patentable for at least similar reasons as those for the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

Please apply any charges or credits to deposit account 06-1050, referencing attorney docket 38879-0004001.

Respectfully submitted,

Date:/3/29/16/_____

/David L. Feigenbaum/_____
David L. Feigenbaum
Reg. No. 30,378

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

23501517.doc

Electronic Acknowledgement Receipt

EFS ID:	25332642
Application Number:	14021585
International Application Number:	
Confirmation Number:	3983
Title of Invention:	SECURITY RISK MANAGEMENT
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone
Customer Number:	26161
Filer:	David L Feigenbaum/jennifer franco
Filer Authorized By:	David L Feigenbaum
Attorney Docket Number:	38879-0004001
Receipt Date:	29-MAR-2016
Filing Date:	09-SEP-2013
Time Stamp:	14:59:06
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		response.pdf	104950 cec2744c63de226a452829c210aa89fd9aef2725	yes	17

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	16
	Applicant Arguments/Remarks Made in an Amendment	17	17
Warnings:			
Information:			
Total Files Size (in bytes):		104950	
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.			

Substitute Disclosure Form U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 38879-0004001	Application No. 14/021,585
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	Applicant BitSight Technologies, Inc.	
	Filing Date September 9, 2013	Group Art Unit 2142

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1.	2006/0212925	09-2006	Shull et al.			
	2.	2012/0166458	06-2012	Laudanski et al.			
	3.	2008/0140495	06-2008	Bhamidipaty et al.			
	4.	5,867,799	02-1999	Lang			
	5.	6,016,475	01-2000	Miller			
	6.	7,100,195	08-2006	Underwood			
	7.	2012/0166458	06-2012	Laudanski			
	8.	2005/0080720	04-2005	Betz			
	9.	2004/0221296	11-2004	Ogielski			
	10.	7,748,038	06-2010	Olivier			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	11.	PAIR transaction history of US application no. 13/240,572 and pending claims as of March 22, 2016.
	12.	PAIR transaction history of US application no. 14/944,484 and pending claims as of March 22, 2016.

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Electronic Patent Application Fee Transmittal

Application Number:	14021585			
Filing Date:	09-Sep-2013			
Title of Invention:	SECURITY RISK MANAGEMENT			
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone			
Filer:	David L Feigenbaum/jennifer franco			
Attorney Docket Number:	38879-0004001			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

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

Electronic Acknowledgement Receipt

EFS ID:	25269564
Application Number:	14021585
International Application Number:	
Confirmation Number:	3983
Title of Invention:	SECURITY RISK MANAGEMENT
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone
Customer Number:	26161
Filer:	David L Feigenbaum/jennifer franco
Filer Authorized By:	David L Feigenbaum
Attorney Docket Number:	38879-0004001
Receipt Date:	22-MAR-2016
Filing Date:	09-SEP-2013
Time Stamp:	14:41:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$90
RAM confirmation Number	974
Deposit Account	061050
Authorized User	FISH & RICHARDSON P C

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

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		IDS-1449.pdf	119869	yes	3
			d86a9ce9f69415ea9e32bc37bd6bb70f8d9ce0e2		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Transmittal Letter		1	2	
	Information Disclosure Statement (IDS) Form (SB08)		3	3	
Warnings:					
Information:					
2	Non Patent Literature	6002-TH-PC-.pdf	133041	no	4
			1bd40b61512e73c52f977f9dceab842024474c75		
Warnings:					
Information:					
3	Non Patent Literature	6001-TH-PC-.pdf	166559	no	10
			c6c0322824a3235e2498aff5b113f6d8e334f834		
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	30740	no	2
			23b2e6daa551c45135863a80428a14cbaf94306f		
Warnings:					
Information:					
Total Files Size (in bytes):			450209		

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

First Named Inventor :	Philip John Steuart	Art Unit :	2142
	Gladstone	Examiner :	Omar R. Abdul-Ali
Serial No. :	14/021,585	Conf. No. :	3983
Filed :	September 9, 2013		
Title :	SECURITY RISK MANAGEMENT		

MAIL STOP AMENDMENT

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

INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the attached PTO-1449 form.

Copies of United States patent documents will be provided upon request. Copies of all non-U.S. patent documents and other documents are enclosed.

The United States patent applications and/or patents listed below contain material related to material in this application. Copies of the applications and/or patents, their current claims (in the case of patents), and their transaction histories from the patent office public PAIR website are enclosed (or were provided previously with information disclosure statements identified in the table).

The applicant invites the examiner to consider the claims and claim amendments of these other applications and/or patents, and the positions of the examiners and the applicant that appear in their prosecution histories. The applicant understands that the examiner has direct access to these papers at the patent office, but will be happy to provide copies to the examiner upon request.

First Named Inventor : Philip John Steuart Gladstone
Serial No. : 14/021,585
Filed : September 9, 2013
Page : 2 of 2

Attorney's Docket No.: 38879-0004001

US serial number and filing date/status	Examiner and group art unit	Is patent or application attached and listed on form 1449 and/or what is the date of a prior information disclosure statement with which it was submitted	In the case of an application, are claims attached or what is the date of a prior information disclosure statement with which they were submitted	Is current PAIR transaction history attached and listed on form 1449
14/944,484 11/18/2015 Pending	Simon P. Kanaan GAU 2492	No	Yes	Yes
13/240,572 9/22/2011 Pending	Simon P. Kanaan GAU 2492	No	Yes	Yes
61/492,287 6/2/2011 Expired	N/A	No	N/A	N/A
61/386,156 9/24/2010 Expired	N/A	No	N/A	N/A

This statement is being filed within three months of the filing date of the application or before the receipt of a first action on the merits. Please apply any charges or credits to deposit account 06-1050, reference 38879-0004001.

Respectfully submitted,

Date: 3/22/16/_____

/David L. Feigenbaum/_____

David L. Feigenbaum

Reg. No. 30,378

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

23504416.doc



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.
14/021,585	09/09/2013	Philip John Steuart Gladstone	38879-0004001	3983

26161 7590 03/11/2016
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER

ABDUL-ALI, OMAR R

ART UNIT	PAPER NUMBER
----------	--------------

2142

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

03/11/2016

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):

PATDOCTC@fr.com

Office Action Summary	Application No. 14/021,585	Applicant(s) GLADSTONE ET AL.	
	Examiner OMAR ABDUL-ALI	Art Unit 2142	AIA (First Inventor to File) Status Yes

-- 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 MONTHS 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 11/17/2015.
☐ 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) 1-31 is/are pending in the application.
5a) Of the above claim(s) 1-13 is/are withdrawn from consideration.
- 6) ☐ Claim(s) _____ is/are allowed.
- 7) ☒ Claim(s) 14-17,23-26 and 30 is/are rejected.
- 8) ☒ Claim(s) 18-22,27-29 and 31 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 9/09/2013 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/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date 9/13, 2/14, 10/15 (2).
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 4) ☐ Other: _____.

DETAILED ACTION

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA. This action is in response to the Response to Election/Restriction filed November 17, 2015. Claims 14-31 are elected and have been considered below. Claims 1-13 are withdrawn from consideration.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

3. Claims 14-17, 23-26, and 30 are rejected under 35 U.S.C. 102(a) as being anticipated by Molloy et al. (US 2012/0158725).

Claim 14: Molloy discloses a method comprising:

a. generating a map between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets, at least part of the generating of the map being done automatically (page 6, paragraph 60). Using the Windows tag to associate the correct assets with User 1.

b. enabling a user to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an

Art Unit: 2142

interactive tool for associating the technical assets with the identities of the entities (page 6, paragraph 60). An administrator user may use the security management system to make User 1 responsible for all Windows servers by creating a relationship between User 1 and the tag Windows.

Claim 15: Molloy discloses a method as in Claim 14 above, further comprising:

a. in which the technical assets comprise network-related information (page 2/3, paragraph 29).

Claim 16: Molloy discloses a method as in Claim 15 above, further comprising:

a. in which the network-related information comprises at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server configurations, domain names, social media handles, third-party data hosting, internet service providers, Domain Name System services, Autonomous System numbers, and Border Gateway Protocol advertisements (page 2/3, paragraph 29).

Claim 17: Molloy discloses a method as in Claim 15 above, further comprising:

a. in which generating the map comprises online discovery of information about the technical assets (page 5, paragraph 51).

Claim 23: Molloy discloses a method as in Claim 14 above, further comprising:

a. presenting to the user non-technical-asset information through the user interface (page 8, paragraph 77).

Claim 24: Molloy discloses a method as in Claim 23 above, further comprising:

a. in which the non-technical-asset information comprises information about the entities (page 8, paragraph 77)

Claim 25: Molloy discloses a method as in Claim 24 above, further comprising:

a. in which the information about the entities comprises at least one of descriptions of entities, industry classifications, and employee counts (page 8, paragraph 77).

Claim 26: Molloy discloses a method as in Claim 14 above, further comprising:

a. in which the tool enables the user to assign a technical asset to an entity (page 4, paragraph 41).

Claim 30: Molloy discloses a method as in Claim 14 above, further comprising:

a. in which the part of the generating of the map that is done automatically comprises at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map (page 6, paragraph 60).

Allowable Subject Matter

4. Claims 18-22 and 27-29, and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Nguyen et al. (US 2014/0204803).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMAR ABDUL-ALI whose telephone number is (571)270-1694. The examiner can normally be reached on Monday-Friday 10:30-7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ajay Bhatia can be reached on 571-272-3906. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2142

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.

/OMAR ABDUL-ALI/
Primary Examiner, Art Unit 2142

Notice of References Cited	Application/Control No. 14/021,585		Applicant(s)/Patent Under Reexamination GLADSTONE ET AL.	
	Examiner OMAR ABDUL-ALI		Art Unit 2142	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2012/0158725 A1	06-2012	Molloy; Sean M.	G06F17/30563	707/737
*	B	US-2014/0204803 A1	07-2014	Nguyen; Cuong	H04L41/5054	370/255
	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	CPC 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. 14021585	Applicant(s)/Patent Under Reexamination GLADSTONE ET AL.
	Examiner OMAR ABDUL-ALI	Art Unit 2142

CPC- SEARCHED		
Symbol	Date	Examiner
H04L63/1433	3/07/2016	OAA
G06F3/0484	3/07/2016	OAA

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Performed EAST search (USPAT, US-PGPUB)	3/07/2016	OAA

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

--	--



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

BIB DATA SHEET

CONFIRMATION NO. 3983

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.		
14/021,585	09/09/2013	715	2142	38879-0004001		
APPLICANTS BitSight Technologies, Inc., Cambridge, MA INVENTORS Philip John Steuart Gladstone, Carlisle, MA; Alan Joseph Kirby, Hollis, NH; John Matthew Truelove, Cambridge, MA; David Feinzeig, Stoneham, MA; Nagarjuna Venna, Waltham, MA; Stephen Boyer, Waltham, MA; ** CONTINUING DATA ***** ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 09/24/2013						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and Acknowledged <u>/OMAR R ABDUL-ALI/</u> Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY MA	SHEETS DRAWINGS 16	TOTAL CLAIMS 31	INDEPENDENT CLAIMS 2
ADDRESS FISH & RICHARDSON P.C. (BO) P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022 UNITED STATES						
TITLE SECURITY RISK MANAGEMENT						
FILING FEE RECEIVED 1170	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		

<i>Index of Claims</i> 	Application/Control No. 14021585	Applicant(s)/Patent Under Reexamination GLADSTONE ET AL.
	Examiner OMAR ABDUL-ALI	Art Unit 2142

✓	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	08/12/2015	03/07/2016												
	1	÷	N												
	2	÷	N												
	3	÷	N												
	4	÷	N												
	5	÷	N												
	6	÷	N												
	7	÷	N												
	8	÷	N												
	9	÷	N												
	10	÷	N												
	11	÷	N												
	12	÷	N												
	13	÷	N												
	14	÷	✓												
	15	÷	✓												
	16	÷	✓												
	17	÷	✓												
	18	÷	O												
	19	÷	O												
	20	÷	O												
	21	÷	O												
	22	÷	O												
	23	÷	✓												
	24	÷	✓												
	25	÷	✓												
	26	÷	✓												
	27	÷	O												
	28	÷	O												
	29	÷	O												
	30	÷	✓												
	31	÷	O												

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	("20040250122").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/03/07 09:38
L2	1	("20060212925").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/03/07 10:14
L3	1	("20040193918").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/03/07 10:15
L4	0	network security with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:16
L5	1	security with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:16
L6	1	"14021585"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:28
L7	0	employee count with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:30
L8	24	employee count with entity and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:31
L9	2	(entit\$3 with technical asset) and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:33
L10	1218	(entity or entities) with asset same security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:34
L11	18	(entity or entities) with asset with identity same security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:35
L12	41	(entity or entities) with asset near2 data same security and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:38
L13	0	map with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:41
L14	0	map\$4 with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:41
L15	1	technical asset with (ip address or mail server or domain name or network related) and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 10:42
L17	22	iana with tag and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:03
L18	9	iana with asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:06
L19	35	(iana or regional internet registry) with discover\$3 and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:07
L20	0	(iana or regional internet registry) with technical asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:08
L21	9	(iana or regional internet registry) with asset and @ad<"20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:08
L22	1	dns quer\$3 with asset and	US-PGPUB;	ADJ	ON	2016/03/07

		@ad< "20130909"	USPAT			12:12
L23	0	crowd source with entity with map and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:20
L24	0	crowd source with entity with security and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:20
L25	12	approval with tag with asset and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:25
L26	0	review with technical asset with (map or tag) and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:27
L27	17	event data with security state and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:27
L28	4	event data with security state with application and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:28
L29	0	(h04l63/1433 or g06f3/0484) and technical asset with identity same security and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 12:52
S1	0	generat\$3 near2 map with technical asset with security characteristic	US-PGPUB; USPAT	ADJ	OFF	2016/02/11 17:19
S2	1	generat\$3 near2 map with technical asset with security characteristic	US-PGPUB; USPAT	ADJ	ON	2016/02/11 17:20
S3	1	map with technical asset with security characteristic	US-PGPUB; USPAT	ADJ	ON	2016/02/11 17:22
S4	0	map with technical asset with security characteristic and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/02/11 17:22
S5	0	map with technical asset near2 entity with security and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/02/11 17:24
S6	0	technical asset near2 entity with security and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/02/11 17:25
S7	1	("20040250122").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/02/23 18:53
S8	0	technical asset with numbers authority and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 03:20
S9	13	discover\$3 with numbers authority and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 03:20
S10	1	technical asset with security and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 03:56
S11	0	technical asset with identity same security and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 03:58
S12	0	technical asset with map and @ad< "20130909"	US-PGPUB; USPAT	ADJ	ON	2016/03/07 03:58

EAST Search History (Interference)

<This search history is empty>

3/ 7/ 2016 12:56:18 PM
C:\ Users\ oali\ Documents\ EAST\ Workspaces\ 14021585.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor :	Philip John Steuart	Art Unit :	2431
	Gladstone	Examiner :	Unknown
Serial No. :	14/021,585	Conf. No. :	3983
Filed :	September 9, 2013		
Title :	SECURITY RISK MANAGEMENT		

MAIL STOP AMENDMENT

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

INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the attached PTO-1449 form.

A copy of the United States patent document will be provided upon request. Copies of all non-U.S. patent documents and other documents are enclosed.

The United States patent applications and/or patents listed below contain material related to material in this application. Copies of the applications and/or patents, their current claims (in the case of patents), and their transaction histories from the patent office public PAIR website are enclosed (or were provided previously with information disclosure statements identified in the table).

The applicant invites the examiner to consider the claims and claim amendments of these other applications and/or patents, and the positions of the examiners and the applicant that appear in their prosecution histories. The applicant understands that the examiner has direct access to these papers at the patent office, but will be happy to provide copies to the examiner upon request.

First Named Inventor : Philip John Steuart Gladstone
 Serial No. : 14/021,585
 Filed : September 9, 2013
 Page : 2 of 2

Attorney's Docket No.: 38879-0004001

US serial number and filing date/status	Examiner and group art unit	Is patent or application attached and listed on form 1449 and/or what is the date of a prior information disclosure statement with which it was submitted	In the case of an application, are claims attached or what is the date of a prior information disclosure statement with which they were submitted	Is current PAIR transaction history attached and listed on form 1449
61/386,156 9/24/2010 Expired	N/A	No	No	Yes
61/492,287 6/1/2011 Issued	N/A	No	No	No - Unavailable in PAIR
13/240,572 9/22/2011 Pending	Simon P. Kanaan GAU 2432	Yes	Yes	Yes

This statement is being filed within three months of the filing date of the application or before the receipt of a first action on the merits.

Apply any necessary charges or credits to deposit account 06-1050, referencing the above attorney docket number.

Please contact the undersigned if there are any questions regarding this Statement.

Respectfully submitted,

Date:/10/8/15/_____

/David L. Feigenbaum/_____
 David L. Feigenbaum
 Reg. No. 30,378

Customer Number 26161
 Fish & Richardson P.C.
 Telephone: (617) 542-5070
 Facsimile: (877) 769-7945

23445770.doc

/OMAR R ABDUL-ALI/

03/07/2016

Substitute Disclosure Form U.S. Department of Commerce Patent and Trademark Office Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	Attorney Docket No. 38879-0004001	Application No. 14/021,585
	Applicant BitSight Technologies, Inc.	
	Filing Date September 9, 2013	Group Art Unit 2431

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1.	2006/0212925	09-2006	Shull et al.			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	2.	PAIR transaction history of US application no. 13/240,572 as of October 7, 2015, application as filed and pending claims.
	3.	PAIR transaction history of US application no. 61/386,156 as of October 7, 2015.

Examiner Signature /OMAR R ABDUL-ALI/	Date Considered 03/07/2016
---	--------------------------------------

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

Black Kite Ex. 1002, Page 88 of 232

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.R.A/

Sheet 1 of 1

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 38879-0004001	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant BitSight Technologies, Inc.	
		Filing Date	Group Art Unit

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	1	Edmonds, Robert, "ISC Passive DNS Architecture", Internet Systems Consortium, Inc., March 2012 (18 pages).

Examiner Signature /OMAR R ABDUL-ALI/	Date Considered 03/07/2016
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Disclosure Form

Black Kite Ex. 1002, Page 89 of 232

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.R.A/

Sheet 1 of 3

Substitute Disclosure Form Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 38879-0004001	Application No. 14/021,585
	Applicant BitSight Technologies, Inc.		
	Filing Date September 9, 2013	Group Art Unit 2431	

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1	2004/0250122	12-2004	Newton, Chris			
	2	2004/0193918	09-2004	Green et al.			
	3	2005/0108415	05-2005	Turk et al.			
	4	7,194,769	03-2007	Lippmann et al.			
	5	7,290,275	10-2007	Baudoin et al.			
	6	7,971,252	06-2011	Lippmann et al.			
	7	2004/0010709	01-2004	Baudoin et al.			
	8	2005/0138413	06-2005	Lippmann et al.			
	9	2008/0047018	02-2008	Baudoin et al.			
	10	2008/0209565	08-2008	Baudoin et al.			
	11	2009/0265787	10-2009	Baudoin et al.			
	12	2009/0293128	11-2009	Lippmann et al.			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	13	SBIR Phase I: Enterprise Cyber Security Scoring, CyberAnalytix, LLC, http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=1013603 , April 28, 2010.
	14	"Twenty Critical Controls for Effective Cyber Defense: Consensus Audit," Version 2.3, November 13, 2009, retrieved on April 9, 2010 from http://www.sans.org/critical-security-controls/print.php .
	15	"An Executive View of IT Governance," IT Governance Institute, 2009, 32 pages.
	16	Lippmann, R.P., et al., "An Annotated Review of Papers on Attack Graphs," Project Report IA-1, Lincoln Laboratory, Massachusetts Institute of Technology, March 31, 2005, 39 pages.
	17	Artz, Michael Lyle, "NetSPA: A Network Security Planning Architecture," Massachusetts Institute of Technology, May 24, 2002, 97 pages.
	18	Nye, John, "Avoiding Audit Overlap," Moody's Risk Services, Presentation, Source Boston, March 14, 2008, 19 pages.
	19	"Agreed Upon Procedures," Version 4.0, BITS, The Financial Institution Shared Assessments Program, Assessment Guide, September 2008, 56 pages.
	20	"Master Security Criteria," Version 3.0, BITS Financial Services Security Laboratory, October, 2001, 47 pages.

Examiner Signature /OMAR R ABDUL-ALI/	Date Considered 03/07/2016
---	--------------------------------------

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

Black Kite Ex. 1002, Page 90 of 232

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.R.A/

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 38879-0004001	Application No. 14/021,585
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant BitSight Technologies, Inc.	
		Filing Date September 9, 2013	Group Art Unit 2431

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	21	The Financial Institution Shared Assessments Program, Industry Positioning and Mapping Document, BITS, October 2007, 44 pages.
	22	Browne, Niall, et al., "Shared Assessments Program AUP and SAS70 Frequently Asked Questions," BITS, 4 pages.
	23	"Shared Assessments: Getting Started," BITS, 2008, 4 pages.
	24	Boyer, Stephen, et al., "Playing with Blocks: SCAP-Enable Higher-Level Analyses, MIT Lincoln Laboratory, 5th Annual IT Security Automation Conference, October 26-29, 2009, 35 pages.
	25	Buckshaw, Donald L., "Use of Decision Support Techniques for Information System Risk Management," submitted for publication in Wiley's Encyclopedia of Quantitative Risk Assessment in January 2007, 11 pages.
	26	Buehler, Kevin S., et al., "Running with risk," The McKinsey Quarterly, No.4, 2003, pp. 40-49.
	27	Chu, Matthew, et al., "Visualizing Attack Graphs, Reachability, and Trust Relationships with NAVIGATOR," MIT Lincoln Library, VizSEC '10, Ontario, Canada, September 14, 2010, 12 pages.
	28	The CIS Security Metrics v1.0.0, The Center for Internet Security, May 11, 2009, 90 pages.
	29	Method Documentation, CNSS Risk Assessment Tool Version 1.1, March 31, 2009, 24 pages.
	30	Crowther, Kenneth G., et al., "Principles for Better Information Security through More Accurate, Transparent Risk Scoring," Journal of Homeland Security and Emergency Management, Vol. 7, Issue 1, Article 37, 2010, 20 pages.
	31	"Assuring a Trusted and Resilient Information and Communications Infrastructure," Cyberspace Policy Review, May, 2009, 76 pages.
	32	Davis, Lois M., et al., "The National Computer Security Survey (NCSS) Final Methodology," Technical report prepared for the Bureau of Justice Statistics, Safety and Justice Program, RAND Infrastructure, Safety and Environment (ISE), 2008, 91 pages.
	33	Dillon-Merrill, PhD., Robin L, et al., "Logic Trees: Fault, Success, Attack, Event, Probability, and Decision Trees," Wiley Handbook of Science and Technology for Homeland Security, 13 pages.
	34	Dun & Bradstreet, The DUNSRight Quality Process: Power Behind Quality Information, 24 pages.
	35	The Dun & Bradstreet Corp. Stock Report, Standard & Poor's, June 6, 2009, 8 pages.
	36	Equifax Inc. Stock Report, Standard & Poor's, June 6, 2009, 8 pages.
	37	The Fair Credit Reporting Act (FCRA) of the Federal Trade Commission (FTC), July 30, 2004, 86 pages.
	38	Report to the Congress on Credit Scoring and Its Effects on the Availability and Affordability of Credit, Board of Governors of the Federal Reserve System, August 2007, 304 pages.
	39	Stone-Gross, Brett, et al., "FIRE: Finding Rogue Networks," 10 pages.
	40	Ingols, Kyle, et al., "Modeling Modern Network Attacks and Countermeasures Using Attack Graphs," MIT Lincoln Laboratory, 16 pages.
	41	Ingols, Kyle, et al., "Practical Attack Graph Generation for Network Defense," MIT Lincoln Library, IEEE Computer Society, Proceedings of the 22nd Annual Computer Security Applications Conference (ACSAC'06), 2006, 10 pages.

Examiner Signature /OMAR R. ABDUL-ALI/	Date Considered 03/07/2016
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Disclosure Form

Black Kite Ex. 1002, Page 91 of 232

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.R.A/

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 38879-0004001	Application No. 14/021,585
Information Disclosure Statement by Applicant (Use several sheets if necessary)		Applicant BitSight Technologies, Inc.	
		Filing Date September 9, 2013	Group Art Unit 2431
(37 CFR §1.98(b))			

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	42	Ingols, Kyle, et al., "Practical Experiences Using SCAP to Aggregate CND Data," MIT Lincoln Library, Presentation to NIST SCAP Conference, September 24, 2008, 59 pages.
	43	Johnson, Eric, et al., "Information Risk and the Evolution of the Security Rating Industry," March 24, 2009, 27 pages.
	44	Lippmann, R.P., et al., "Evaluating and Strengthening Enterprise Network Security Using Attack Graphs," Project Report IA-2, MIT Lincoln Laboratory, October 5, 2005, 96 pages.
	45	"Assessing Risk in Turbulent Times," A Workshop for Information Security Executives, Glassmeyer/McNamee Center for Digital Strategies, Tuck School of Business at Dartmouth, Institute for Information Infrastructure Protection, 2009, 17 pages.
	46	Lippmann, Richard, et al., "Validating and Restoring Defense in Depth Using Attack Graphs," MIT Lincoln Laboratory, 10 pages.
	47	"Plugging the Right Holes," Lab Notes, MIT Lincoln Library, Posted July 2008, retrieved September 14, 2010 from http://www.ll.mit.edu/publications/labnotes/pluggingtherightholes/ ... , 2 pages.
	48	Rare Events, October 2009, JASON, The MITRE Corporation, October 2009, 104 pages.
	49	Lippmann, Rich, et al., "NetSPA: a Network Security Planning Architecture, MIT Lincoln Laboratory, 11 pages.
	50	Proposal and Award Policies and Procedures Guide, Part I - Proposal Preparation & Submission Guidelines GPG, The National Science Foundation, February 2009, 68 pages.
	51	Paxson, Vern, "How The Pursuit of Truth Led Me To Selling Viagra," EECS Department, University of California, International Computer Science Institute, Lawrence Berkeley National Laboratory, August 13, 2009, 68 pages.
	52	"Report on Controls Placed in Operation and Test of Operating Effectiveness," EasCorp, January 1 through December 31, 2008, prepared by Crowe Horwath, 58 pages.
	53	Taleb, Nassim N., et al., "The Six Mistakes Executives Make in Risk Management," Harvard Business Review, October 2009, 5 pages.
	54	2009 Data Breach Investigations Report, study conducted by Verizon Business RISK Team, 52 pages.
	55	Williams, Leevar, et al., "GARNET: A Graphical Attack Graph and Reachability Network Evaluation Tool," MIT Lincoln Library, VizSEC 2009, pp. 44-59.
	56	Williams, Leevar, et al., "An Interactive Attack Graph Cascade and Reachability Display," MIT Lincoln Laboratory, 17 pages.

Examiner Signature /OMAR R ABDUL-ALI/	Date Considered 03/07/2016
---	--------------------------------------

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form

Black Kite Ex. 1002, Page 92 of 232

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.R.A/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor :	Philip John Steuart	Art Unit :	2431
	Gladstone	Examiner :	Unknown
Serial No. :	14/021,585	Conf. No. :	3983
Filed :	September 9, 2013		
Title :	SECURITY RISK MANAGEMENT		

Mail Stop Amendment

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

REPLY TO RESTRICTION REQUIREMENT DATED AUGUST 18, 2015

List of claims (replacing prior versions):

1. (withdrawn) A method comprising:
receiving traces of activities of an online user who is associated with an entity; and
inferring by analysis of the traces a security state of the entity.
2. (withdrawn) The method of claim 1 in which the traces indicate successful attacks on computer systems of the entity.
3. (withdrawn) The method of claim 1 comprising distinguishing between traces that represent a less satisfactory security state of the entity and traces that represent a more satisfactory security state of the entity.
4. (withdrawn) The method of claim 1 in which the analysis comprises a comparison of traces that originated in different contexts of the user's online activities.
5. (withdrawn) The method of claim 4 in which the different contexts comprise different times.
6. (withdrawn) The method of claim 5 in which the traces that originated at one of the times reflect a user deletion relative to the traces that originated at an earlier time.
7. (withdrawn) The method of claim 6 in which the traces that originated at one of the times reflect a user deletion of malicious data or code relative to the traces at the earlier time.
8. (withdrawn) The method of claim 4 in which the different contexts comprise a context the security of which is controlled by the entity and a context the security of which is at least partly uncontrolled by the entity.
9. (withdrawn) The method of claim 8 in which the controlled context comprises a computer system or device made accessible by the entity to the user, and the partly uncontrolled context comprises a computer system or device owned by the user.
10. (withdrawn) The method of claim 4 in which the traces comprise tracking of an identity of the online user between two of the different contexts.

11. (withdrawn) The method of claim 10 in which the tracking comprises cookies associated with advertising directed to the online user.

12. (withdrawn) The method of claim 1 in which the traces comprise indications of security checks made with respect to communications associated with the user.

13. (withdrawn) The method of claim 12 in which the security checks comprise indications of whether email messages conform to DomainKeys Identified Mail standards or email domains conform to Sender Policy Framework.

14. (original) A method comprising:

generating a map between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets, at least part of the generating of the map being done automatically; and

enabling a user to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities.

15. (original) The method of claim 14 in which the technical assets comprise network-related information.

16. (original) The method of claim 15 in which the network-related information comprises at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server configurations, domain names, social media handles, third-party data hosting, internet service providers, Domain Name System services, Autonomous System numbers, and Border Gateway Protocol advertisements.

17. (original) The method of claim 15 in which generating the map comprises online discovery of information about the technical assets.

18. (original) The method of claim 17 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry.

19. (original) The method of claim 17 in which the information about the technical assets is discovered through passive DNS queries.

20. (original) The method of claim 19 comprising identifying from the passive DNS queries associations between domain names and network addresses.

21. (original) The method of claim 20 comprising tracking changes over time in the network addresses that are associated with a given domain name.

22. (original) The method of claim 20 in which identifying from the passive DNS queries associations between domain names and network addresses comprises:

- receiving a first domain name for an entity from the entities;
- sending a first passive DNS query to identify first name servers for the first domain name;
- receiving a list of the first name servers for the first domain;
- sending a second passive DNS query, for each of the first name servers, to identify second domain names for which the name server is authoritative;
- receiving a list, for each of the first name servers, of the second domain names for which the name server is authoritative;
- sending a third passive DNS query, for each of the second domain names, to identify host names for the hosts of the second domain name and Internet Protocol addresses for the host names;
- receiving a list of the host names and the Internet Protocol addresses for the host names;
- and
- mapping each of the Internet Protocol addresses to an attribute for the entity.

23. (original) The method of claim 14 comprising presenting to the user non-technical-asset information through the user interface.

24. (original) The method of claim 23 in which the non-technical-asset information comprises information about the entities.

25. (original) The method of claim 24 in which the information about the entities comprises at least one of descriptions of entities, industry classifications, and employee counts.

26. (original) The method of claim 14 in which the tool enables the user to assign a technical asset to an entity.

27. (original) The method of claim 14 comprising invoking external crowd-sourced services to aid in generating the map.

28. (original) The method of claim 14 comprising enabling a separate review and approval of entities proposed to be included in the map.

29. (original) The method of claim 14 comprising providing the map to an application for joining to event data or scoring the security state of the entities.

30. (original) The method of claim 14 in which the part of the generating of the map that is done automatically comprises at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map.

31. (original) The method of claim 14 comprising generating graphs of relationships among entities based on their associations with technical assets.

First Named Inventor : Philip John Steuart Gladstone
Serial No. : 14/021,585
Filed : September 9, 2013
Page : 6 of 6

Attorney's Docket No.: 38879-0004001

REMARKS

The applicant elects group II (claims 14-31) and takes no position here on the appropriateness of the restriction requirement. Claims 1 through 31 encompass the elected group.

Please apply any necessary charges or credits to Deposit Account No. 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: 11/17/15/_____

/David L. Feigenbaum/_____
David L. Feigenbaum
Reg. No. 30,378

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

23458328.doc

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor :	Philip John Steuart	Art Unit :	2431
	Gladstone	Examiner :	Unknown
Serial No. :	14/021,585	Conf. No. :	3983
Filed :	September 9, 2013		
Title :	SECURITY RISK MANAGEMENT		

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

PETITION FOR ONE-MONTH EXTENSION OF TIME UNDER 37 C.F.R. §1.136

Please extend the period for response to the action dated August 18, 2015, for one month to and including November 18, 2015.

The fees of \$100 are being paid with this petition. In addition, please apply any other necessary charges or credits to deposit account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date:/11/17/15/_____

/David L. Feigenbaum/_____
David L. Feigenbaum
Reg. No. 30,378

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

23460746.doc

Electronic Patent Application Fee Transmittal

Application Number:	14021585			
Filing Date:	09-Sep-2013			
Title of Invention:	SECURITY RISK MANAGEMENT			
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone			
Filer:	David L Feigenbaum/jennifer franco			
Attorney Docket Number:	38879-0004001			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 1 month with \$0 paid	2251	1	100	100
Miscellaneous:				
Total in USD (\$)				100

Electronic Acknowledgement Receipt

EFS ID:	24106108
Application Number:	14021585
International Application Number:	
Confirmation Number:	3983
Title of Invention:	SECURITY RISK MANAGEMENT
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone
Customer Number:	26161
Filer:	David L Feigenbaum/jennifer franco
Filer Authorized By:	David L Feigenbaum
Attorney Docket Number:	38879-0004001
Receipt Date:	17-NOV-2015
Filing Date:	09-SEP-2013
Time Stamp:	13:47:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 100
RAM confirmation Number	11576
Deposit Account	061050
Authorized User	FISH & RICHARDSON P C

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

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		response-RR.pdf	83357	yes	6
			31a041da38792132fd385c5df0f2213a4e9c1b2c		
	Multipart Description/PDF files in .zip description				
	Document Description		Start		End
	Response to Election / Restriction Filed		1		1
	Claims		2		5
	Applicant Arguments/Remarks Made in an Amendment		6		6
Warnings:					
Information:					
2	Extension of Time	extension.pdf	45993	no	1
			04cf365ce21997be224749db2d9088dcbbec42d47		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30871	no	2
			4f169eaad404dca9aff739557c07d54c560d3f68		
Warnings:					
Information:					
Total Files Size (in bytes):			160221		

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.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/021,585	Filing Date 09/09/2013	☐ To be Mailed
---	---	----------------------------------	---------------------------------------

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

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), (l), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	(Column 1)	(Column 2)	(Column 3)	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	11/17/2015	CLAIMS REMAINING AFTER AMENDMENT					
	Total (37 CFR 1.16(i))	* 31	Minus	** 31	= 0	X \$40 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X \$210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
TOTAL ADD'L FEE						0	

AMENDMENT	(Column 1)	(Column 2)	(Column 3)	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
		CLAIMS REMAINING AFTER AMENDMENT					
	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
/KIM WATSON/

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.

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 38879-0004001	Application No. 14/021,585
Information Disclosure Statement by Applicant (Use several sheets if necessary)		Applicant BitSight Technologies, Inc.	
		Filing Date September 9, 2013	Group Art Unit 2431
(37 CFR §1.98(b))			

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1.	2006/0212925	09-2006	Shull et al.			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	2.	PAIR transaction history of US application no. 13/240,572 as of October 7, 2015, application as filed and pending claims.
	3.	PAIR transaction history of US application no. 61/386,156 as of October 7, 2015.

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Electronic Acknowledgement Receipt

EFS ID:	23737277
Application Number:	14021585
International Application Number:	
Confirmation Number:	3983
Title of Invention:	SECURITY RISK MANAGEMENT
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone
Customer Number:	26161
Filer:	David L Feigenbaum/jennifer franco
Filer Authorized By:	David L Feigenbaum
Attorney Docket Number:	38879-0004001
Receipt Date:	08-OCT-2015
Filing Date:	09-SEP-2013
Time Stamp:	18:56:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		4001-IDS-1449.pdf	122333 a3a93f0654df6af4b917264f9e6bbfea800d1dd9	yes	3

	Multipart Description/PDF files in .zip description								
	Document Description		Start	End					
	Transmittal Letter		1	2					
	Information Disclosure Statement (IDS) Form (SB08)		3	3					
Warnings:									
Information:									
2	Non Patent Literature	61386156-TH.pdf	88563	no	2				
			f6b5bee2f4ef6b14e885854d1e49d3efcd06cb317						
Warnings:									
Information:									
3	Non Patent Literature	13240572-TH-APP-PC.pdf	1905599	no	45				
			c360540b712976ed075595eea4dc27c492d0cc527						
Warnings:									
Information:									
Total Files Size (in bytes):			2116495						
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

First Named Inventor :	Philip John Steuart	Art Unit :	2431
	Gladstone	Examiner :	Unknown
Serial No. :	14/021,585	Conf. No. :	3983
Filed :	September 9, 2013		
Title :	SECURITY RISK MANAGEMENT		

MAIL STOP AMENDMENT

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

INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the attached PTO-1449 form.

A copy of the United States patent document will be provided upon request. Copies of all non-U.S. patent documents and other documents are enclosed.

The United States patent applications and/or patents listed below contain material related to material in this application. Copies of the applications and/or patents, their current claims (in the case of patents), and their transaction histories from the patent office public PAIR website are enclosed (or were provided previously with information disclosure statements identified in the table).

The applicant invites the examiner to consider the claims and claim amendments of these other applications and/or patents, and the positions of the examiners and the applicant that appear in their prosecution histories. The applicant understands that the examiner has direct access to these papers at the patent office, but will be happy to provide copies to the examiner upon request.

First Named Inventor : Philip John Steuart Gladstone
Serial No. : 14/021,585
Filed : September 9, 2013
Page : 2 of 2

Attorney's Docket No.: 38879-0004001

US serial number and filing date/ status	Examiner and group art unit	Is patent or application attached and listed on form 1449 and/or what is the date of a prior information disclosure statement with which it was submitted	In the case of an application, are claims attached or what is the date of a prior information disclosure statement with which they were submitted	Is current PAIR transaction history attached and listed on form 1449
61/386,156 9/24/2010 Expired	N/A	No	No	Yes
61/492,287 6/1/2011 Issued	N/A	No	No	No - Unavailable in PAIR
13/240,572 9/22/2011 Pending	Simon P. Kanaan GAU 2432	Yes	Yes	Yes

This statement is being filed within three months of the filing date of the application or before the receipt of a first action on the merits.

Apply any necessary charges or credits to deposit account 06-1050, referencing the above attorney docket number.

Please contact the undersigned if there are any questions regarding this Statement.

Respectfully submitted,

Date:/10/8/15/_____

/David L. Feigenbaum/_____
David L. Feigenbaum
Reg. No. 30,378

Customer Number 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

23445770.doc



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.
14/021,585	09/09/2013	Philip John Steuart Gladstone	38879-0004001	3983

26161 7590 08/18/2015
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER

ABDUL-ALI, OMAR R

ART UNIT	PAPER NUMBER
----------	--------------

2142

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

08/18/2015

ELECTRONIC

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

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

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

PATDOCTC@fr.com

Office Action Summary	Application No. 14/021,585	Applicant(s) GLADSTONE ET AL.	
	Examiner OMAR ABDUL-ALI	Art Unit 2142	AIA (First Inventor to File) Status Yes

-- 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 2 MONTHS 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 9/09/13.
☐ 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) 1-31 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) ____ is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☒ Claim(s) 1-31 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) | 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____. | 4) ☐ Other: ____. |

DETAILED ACTION

This action is in response to the original filing of September 9, 2013. Claims 1-31 are pending and have been considered below.

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-13, drawn to a method of receiving traces of activities of an online user who is associated with an entity, and inferring by analysis of the traces a security state of the entity, classified in 726/23.

II. Claims 14-31, drawn to a method comprising generating a map between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets, at least part of the generating of the map being done automatically and enabling a user to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities, classified in 715/771.

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the method of Invention I

Art Unit: 2142

includes tracing activities of an online user associated with an entity, and inferring by analyses of the traces a security state of the entity . The subcombination has separate utility such as generating a map between technical assets that contribute to security characteristics of entities, and enabling a user to assist in the generating of the map by presenting to the user through a user interface data about the technical assets of entities and an interactive tool for associating the technical assets with the identities of the entities.

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

3. Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and/or examination burden if restriction were not required because one or more of the following reasons apply:

The combination and subcombination are classified in different art areas.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of an invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103 or pre-AIA 35 U.S.C. 103(a) of the other invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMAR ABDUL-ALI whose telephone number is

Art Unit: 2142

(571)270-1694. The examiner can normally be reached on Monday-Friday 10:30-7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ajay Bhatia can be reached on 571-272-3906. 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.

/OMAR ABDUL-ALI/
Primary Examiner, Art Unit 2142

<i>Index of Claims</i> 	Application/Control No. 14021585	Applicant(s)/Patent Under Reexamination GLADSTONE ET AL.
	Examiner OMAR ABDUL-ALI	Art Unit 2142

✓	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	08/12/2015							
	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	÷							
	30	÷							
	31	÷							



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
14/021,585	09/09/2013	Philip John Steuart Gladstone	38879-0004001

CONFIRMATION NO. 3983

PUBLICATION NOTICE



OC000000073923968

26161
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

Title:SECURITY RISK MANAGEMENT

Publication No.US-2015-0074579-A1

Publication Date:03/12/2015

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

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

Substitute Disclosure Form Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 38879-0004001	Application No. 14/021,585
	Applicant BitSight Technologies, Inc.		
	Filing Date September 9, 2013	Group Art Unit 2431	

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1	2004/0250122	12-2004	Newton, Chris			
	2	2004/0193918	09-2004	Green et al.			
	3	2005/0108415	05-2005	Turk et al.			
	4	7,194,769	03-2007	Lippmann et al.			
	5	7,290,275	10-2007	Baudoin et al.			
	6	7,971,252	06-2011	Lippmann et al.			
	7	2004/0010709	01-2004	Baudoin et al.			
	8	2005/0138413	06-2005	Lippmann et al.			
	9	2008/0047018	02-2008	Baudoin et al.			
	10	2008/0209565	08-2008	Baudoin et al.			
	11	2009/0265787	10-2009	Baudoin et al.			
	12	2009/0293128	11-2009	Lippmann et al.			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	13	SBIR Phase I: Enterprise Cyber Security Scoring, CyberAnalytix, LLC, http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=1013603 , April 28, 2010.
	14	"Twenty Critical Controls for Effective Cyber Defense: Consensus Audit," Version 2.3, November 13, 2009, retrieved on April 9, 2010 from http://www.sans.org/critical-security-controls/print.php .
	15	"An Executive View of IT Governance," IT Governance Institute, 2009, 32 pages.
	16	Lippmann, R.P., et al., "An Annotated Review of Papers on Attack Graphs," Project Report IA-1, Lincoln Laboratory, Massachusetts Institute of Technology, March 31, 2005, 39 pages.
	17	Artz, Michael Lyle, "NetSPA: A Network Security Planning Architecture," Massachusetts Institute of Technology, May 24, 2002, 97 pages.
	18	Nye, John, "Avoiding Audit Overlap," Moody's Risk Services, Presentation, Source Boston, March 14, 2008, 19 pages.
	19	"Agreed Upon Procedures," Version 4.0, BITS, The Financial Institution Shared Assessments Program, Assessment Guide, September 2008, 56 pages.
	20	"Master Security Criteria," Version 3.0, BITS Financial Services Security Laboratory, October, 2001, 47 pages.

Examiner Signature	Date Considered
--------------------	-----------------

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 38879-0004001	Application No. 14/021,585
Information Disclosure Statement by Applicant (Use several sheets if necessary)		Applicant BitSight Technologies, Inc.	
		Filing Date September 9, 2013	Group Art Unit 2431
(37 CFR §1.98(b))			

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	21	The Financial Institution Shared Assessments Program, Industry Positioning and Mapping Document, BITS, October 2007, 44 pages.
	22	Browne, Niall, et al., "Shared Assessments Program AUP and SAS70 Frequently Asked Questions," BITS, 4 pages.
	23	"Shared Assessments: Getting Started," BITS, 2008, 4 pages.
	24	Boyer, Stephen, et al., "Playing with Blocks: SCAP-Enable Higher-Level Analyses, MIT Lincoln Laboratory, 5th Annual IT Security Automation Conference, October 26-29, 2009, 35 pages.
	25	Buckshaw, Donald L., "Use of Decision Support Techniques for Information System Risk Management," submitted for publication in Wiley's Encyclopedia of Quantitative Risk Assessment in January 2007, 11 pages.
	26	Buehler, Kevin S., et al., "Running with risk," The McKinsey Quarterly, No.4, 2003, pp. 40-49.
	27	Chu, Matthew, et al., "Visualizing Attack Graphs, Reachability, and Trust Relationships with NAVIGATOR," MIT Lincoln Library, VizSEC '10, Ontario, Canada, September 14, 2010, 12 pages.
	28	The CIS Security Metrics v1.0.0, The Center for Internet Security, May 11, 2009, 90 pages.
	29	Method Documentation, CNSS Risk Assessment Tool Version 1.1, March 31, 2009, 24 pages.
	30	Crowther, Kenneth G., et al., "Principles for Better Information Security through More Accurate, Transparent Risk Scoring," Journal of Homeland Security and Emergency Management, Vol. 7, Issue 1, Article 37, 2010, 20 pages.
	31	"Assuring a Trusted and Resilient Information and Communications Infrastructure," Cyberspace Policy Review, May, 2009, 76 pages.
	32	Davis, Lois M., et al., "The National Computer Security Survey (NCSS) Final Methodology," Technical report prepared for the Bureau of Justice Statistics, Safety and Justice Program, RAND Infrastructure, Safety and Environment (ISE), 2008, 91 pages.
	33	Dillon-Merrill, PhD., Robin L, et al., "Logic Trees: Fault, Success, Attack, Event, Probability, and Decision Trees," Wiley Handbook of Science and Technology for Homeland Security, 13 pages.
	34	Dun & Bradstreet, The DUNSRight Quality Process: Power Behind Quality Information, 24 pages.
	35	The Dun & Bradstreet Corp. Stock Report, Standard & Poor's, June 6, 2009, 8 pages.
	36	Equifax Inc. Stock Report, Standard & Poor's, June 6, 2009, 8 pages.
	37	The Fair Credit Reporting Act (FCRA) of the Federal Trade Commission (FTC), July 30, 2004, 86 pages.
	38	Report to the Congress on Credit Scoring and Its Effects on the Availability and Affordability of Credit, Board of Governors of the Federal Reserve System, August 2007, 304 pages.
	39	Stone-Gross, Brett, et al., "FIRE: Finding Rogue Networks," 10 pages.
	40	Ingols, Kyle, et al., "Modeling Modern Network Attacks and Countermeasures Using Attack Graphs," MIT Lincoln Laboratory, 16 pages.
	41	Ingols, Kyle, et al., "Practical Attack Graph Generation for Network Defense," MIT Lincoln Library, IEEE Computer Society, Proceedings of the 22nd Annual Computer Security Applications Conference (ACSAC'06), 2006, 10 pages.

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 38879-0004001	Application No. 14/021,585
Information Disclosure Statement by Applicant (Use several sheets if necessary)		Applicant BitSight Technologies, Inc.	
		Filing Date September 9, 2013	Group Art Unit 2431
(37 CFR §1.98(b))			

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	42	Ingols, Kyle, et al., "Practical Experiences Using SCAP to Aggregate CND Data," MIT Lincoln Library, Presentation to NIST SCAP Conference, September 24, 2008, 59 pages.
	43	Johnson, Eric, et al., "Information Risk and the Evolution of the Security Rating Industry," March 24, 2009, 27 pages.
	44	Lippmann, R.P., et al., "Evaluating and Strengthening Enterprise Network Security Using Attack Graphs," Project Report IA-2, MIT Lincoln Laboratory, October 5, 2005, 96 pages.
	45	"Assessing Risk in Turbulent Times," A Workshop for Information Security Executives, Glassmeyer/McNamee Center for Digital Strategies, Tuck School of Business at Dartmouth, Institute for Information Infrastructure Protection, 2009, 17 pages.
	46	Lippmann, Richard, et al., "Validating and Restoring Defense in Depth Using Attack Graphs," MIT Lincoln Laboratory, 10 pages.
	47	"Plugging the Right Holes," Lab Notes, MIT Lincoln Library, Posted July 2008, retrieved September 14, 2010 from http://www.ll.mit.edu/publications/labnotes/pluggingtherightholes/ ... , 2 pages.
	48	Rare Events, October 2009, JASON, The MITRE Corporation, October 2009, 104 pages.
	49	Lippmann, Rich, et al., "NetSPA: a Network Security Planning Architecture, MIT Lincoln Laboratory, 11 pages.
	50	Proposal and Award Policies and Procedures Guide, Part I - Proposal Preparation & Submission Guidelines GPG, The National Science Foundation, February 2009, 68 pages.
	51	Paxson, Vern, "How The Pursuit of Truth Led Me To Selling Viagra," EECS Department, University of California, International Computer Science Institute, Lawrence Berkeley National Laboratory, August 13, 2009, 68 pages.
	52	"Report on Controls Placed in Operation and Test of Operating Effectiveness," EasCorp, January 1 through December 31, 2008, prepared by Crowe Horwath, 58 pages.
	53	Taleb, Nassim N., et al., "The Six Mistakes Executives Make in Risk Management," Harvard Business Review, October 2009, 5 pages.
	54	2009 Data Breach Investigations Report, study conducted by Verizon Business RISK Team, 52 pages.
	55	Williams, Leevar, et al., "GARNET: A Graphical Attack Graph and Reachability Network Evaluation Tool," MIT Lincoln Library, VizSEC 2009, pp. 44-59.
	56	Williams, Leevar, et al., "An Interactive Attack Graph Cascade and Reachability Display," MIT Lincoln Laboratory, 17 pages.

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Electronic Acknowledgement Receipt

EFS ID:	18236913
Application Number:	14021585
International Application Number:	
Confirmation Number:	3983
Title of Invention:	SECURITY RISK MANAGEMENT
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone
Customer Number:	26161
Filer:	Joel David Couenhoven/jennifer franco
Filer Authorized By:	Joel David Couenhoven
Attorney Docket Number:	38879-0004001
Receipt Date:	19-FEB-2014
Filing Date:	09-SEP-2013
Time Stamp:	11:14:38
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	Transmittal Letter	IDS.pdf	47647 7495c2ef53adf8772caf87459a76d1d3c72767ca	no	1

Warnings:

Information:

2	Information Disclosure Statement (IDS) Form (SB08)	1449.pdf	99086	no	3
			93a4ef2af067d828525e3b9e81f1699abc701d66		
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Non Patent Literature	SBIR.pdf	428653	no	2
			11e46d45117d0d542f5120e6fb19b535c365750c		
Warnings:					
Information:					
4	Non Patent Literature	twenty-critical-controls.pdf	3858377	no	52
			16cad01322eec59100454f8a4c693d78108169a		
Warnings:					
Information:					
5	Non Patent Literature	an-executive-view.pdf	8375674	no	32
			65c23eec9bef0c734cb926b98981fe244507377c		
Warnings:					
Information:					
6	Non Patent Literature	lippmann-annotated.pdf	1648388	no	39
			f113a7056d0b308b8b128f99191b72cc62c2334		
Warnings:					
Information:					
7	Non Patent Literature	artz.pdf	4185034	no	97
			ca88a850ee9bc192e009319a4bc58cae1bb95b6f		
Warnings:					
Information:					
8	Non Patent Literature	Nye.pdf	5137463	no	19
			c74cc206d9888fb2782ec2301021d7b9baeb7141		
Warnings:					
Information:					
9	Non Patent Literature	agreed-upon-procedures.pdf	2263673	no	56
			82c064be8fd2d68c798d14ab9b807a796bcd38e92		
Warnings:					
Information:					
10	Non Patent Literature	master-security-criteria.pdf	2957076	no	47
			de28bf77ca9c9368fd230518dfc2cddcf323ba5		

Warnings:					
Information:					
11	Non Patent Literature	financial-institution-shared-assessments.pdf	1452566	no	44
			211c29c78b5b43c3df7fa95a11cd408bad402a29		
Warnings:					
Information:					
12	Non Patent Literature	Browne-shared-assessments.pdf	271412	no	4
			71cf2aa737b4ab492b92d5154c7ff8e329de8f9e		
Warnings:					
Information:					
13	Non Patent Literature	shared-assessments-getting-started.pdf	198083	no	4
			7f58befdb425d6b2d7bcd15d27fb2d3871de6adf		
Warnings:					
Information:					
14	Non Patent Literature	Boyer-Playing.pdf	1409485	no	35
			3324bfb7628ffc119001ca04a4e39c4deafb5d14		
Warnings:					
Information:					
15	Non Patent Literature	Buckshaw-Use.pdf	623168	no	11
			2cf063bb45b5a00452826d4e7bca44f5cddcd866		
Warnings:					
Information:					
16	Non Patent Literature	Buehler-Running.pdf	2314235	no	10
			1ea2e6bbe05fef6bdd502b1f8a43da6df7cf1e2		
Warnings:					
Information:					
17	Non Patent Literature	Chu-Visualizing.pdf	1563677	no	12
			9602bdb5a003c1af1e1d8bab3b6ed360f983ec47		
Warnings:					
Information:					
18	Non Patent Literature	The-CIS-Security.pdf	4580182	no	90
			fecdf1fc654cb74d285aaa0d6b898fc8fd2a036a7		
Warnings:					
Information:					
19	Non Patent Literature	Method-documentation.pdf	1590311	no	24
			677996068b345e381119194403247c20291		

Black Kite Ex-1002, Page 124 of 232

Warnings:					
Information:					
20	Non Patent Literature	Crowther-Principles.pdf	1166186	no	20
			2e51dda6fd142c072ee5dc52301c5d54af2887f3		
Warnings:					
Information:					
21	Non Patent Literature	assuring-a-trusted.pdf	4420799	no	76
			854b8109ec85d225764b8d7ff81422c1e1add5be		
Warnings:					
Information:					
22	Non Patent Literature	Davis.pdf	4075903	no	91
			4e3c8bdd6211684fae9f41f7030974dba74aa9b0		
Warnings:					
Information:					
23	Non Patent Literature	Dillon-Merrill-Logic-Trees.pdf	646541	no	13
			3087670e0b210b60c969c4727cb2c09019e52a4a		
Warnings:					
Information:					
24	Non Patent Literature	Dun-Bradstreet-The-Dunsright-Quality.pdf	6966470	no	24
			80c5e314dd960dedeb62c8c63551b4b4d3e1824c		
Warnings:					
Information:					
25	Non Patent Literature	Dun-Bradstreet-Corp-Stock.pdf	947844	no	8
			a0156e9e61ea7c753f0dcac7821562588d17cecf		
Warnings:					
Information:					
26	Non Patent Literature	Equifax-Inc.pdf	925402	no	8
			73e36a58560b26b85c25c70e46b3feb887627576		
Warnings:					
Information:					
27	Non Patent Literature	The-Fair-Credit.pdf	4809795	no	86
			bea7aa7b0e6b46f2e92fbab19d0ef7288d8d7709		
Warnings:					
Information:					
28	Non Patent Literature	Report-to-the-Congress.pdf	15584803	no	304
			4f5246ed37700e7510101d5515158b38049		

Black Kite Ex-1002, Page 125 of 232

Warnings:					
Information:					
29	Non Patent Literature	Stone-Gross.pdf	841032	no	10
			c4c0acc3247e63d57f56009390ca0bf988291e65		
Warnings:					
Information:					
30	Non Patent Literature	Ingols-Modeling.pdf	1128349	no	16
			80156e75326b96899103cc52415161e94d31cf6f		
Warnings:					
Information:					
31	Non Patent Literature	Ingols-practical-attack.pdf	958072	no	10
			448a2283bedd9d10160f3f862ab1cd73f2944c01		
Warnings:					
Information:					
32	Non Patent Literature	Ingols-Practical-Experiences.pdf	4918748	no	59
			a4cc3092ee32cc796ad5710184e46021b244e6b3		
Warnings:					
Information:					
33	Non Patent Literature	Johnson.pdf	1711446	no	27
			81d79c5797085370a4a7c82fa19d81fe874d05be		
Warnings:					
Information:					
34	Non Patent Literature	lippmann-evaluating.pdf	4756874	no	96
			230230773ee5959a811189e8d52ad72a1e27c27		
Warnings:					
Information:					
35	Non Patent Literature	assessing-risk-in-turbulent.pdf	1074296	no	17
			f05a84b7ab03c9c68c000f801e150a30bedff9d34		
Warnings:					
Information:					
36	Non Patent Literature	lippmann-validating.pdf	995368	no	10
			aaaaec2e9ca0e0da5b8efe0327140532ebe4db9af		
Warnings:					
Information:					
37	Non Patent Literature	plugging-the-right-MIT.pdf	155163	no	2
			85a0482710b4ce85d10001902a3b196c119753		

Black Kite Ex-1002, Page 126 of 232

Warnings:					
Information:					
38	Non Patent Literature	rare-events.pdf	3405884	no	104
			983656db42e4a45cc2285756e642c974e1312b96		
Warnings:					
Information:					
39	Non Patent Literature	Lippmann-NetSPA.pdf	626320	no	11
			9f5d4376bc358e0c92cd693d6d96186b89e8856f		
Warnings:					
Information:					
40	Non Patent Literature	Proposal-and-award.pdf	5384202	no	68
			e662d8347e753bb2463bbf88e129fb4ff5f6f747		
Warnings:					
Information:					
41	Non Patent Literature	Paxson.pdf	5473089	no	68
			dfb0966718df51db31e1b5ed72440baafbbba149		
Warnings:					
Information:					
42	Non Patent Literature	report-on-controls.pdf	7868707	no	58
			79962b2bd921a965924811911c79a845ece0266d		
Warnings:					
Information:					
43	Non Patent Literature	taleb-the-six.pdf	608426	no	5
			769036acf07d1576c319f8e57bfe073a62b68280		
Warnings:					
Information:					
44	Non Patent Literature	2009-data.pdf	2742486	no	52
			4812172ab737cf8dd0da26735e3b1242e2821c04		
Warnings:					
Information:					
45	Non Patent Literature	williams-garnet.pdf	1135617	no	16
			e8390f14b2407f3fb22e13c0e7d9970125ca8f1a		
Warnings:					
Information:					
46	Non Patent Literature	williams-interactive.pdf	947320	no	17
			075c14a57b1cbe5a1097389910258cbb0a		

Black Kite Ex-1002, Page 127 of 232

Warnings:	
Information:	
Total Files Size (in bytes):	127279332
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

Applicant : BitSight Technologies, Inc. Art Unit : 2431
Serial No. : 14/021,585 Examiner : Unknown
Filed : September 9, 2013 Conf. No. : 3983
Title : SECURITY RISK MANAGEMENT

MAIL STOP AMENDMENT

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

INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the enclosed PTO-SB-08 or Disclosure Form.

This statement is being filed within three months of the filing date of the application or before the receipt of a first Office Action on the merits. Please apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: February 19, 2014

/Joel D. Couenhoven/
Joel D. Couenhoven
Reg. No. 68,848

Customer Number 26161
Fish & Richardson P.C.
Telephone: (202) 626-6397
Facsimile: (877) 769-7945

23166588.doc

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 14/021,585			
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	70	N/A			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A		N/A	300	N/A			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	360	N/A			
TOTAL CLAIMS (37 CFR 1.16(j))	31	minus 20 =	*	x 40 =	440				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2	minus 3 =	*	x 210 =	0.00				
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				0.00				
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					0.00				
				TOTAL	1170	TOTAL			
* If the difference in column 1 is less than zero, enter "0" in column 2.									
APPLICATION AS AMENDED - PART II									
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY	
AMENDMENT A	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 =	x =	=		
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	x =	=		
	Application Size Fee (37 CFR 1.16(s))								
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
				TOTAL ADD'L FEE		TOTAL ADD'L FEE			
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY	
AMENDMENT B	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 =	x =	=		
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	x =	=		
	Application Size Fee (37 CFR 1.16(s))								
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
				TOTAL ADD'L FEE		TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.									



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
14/021,585	09/09/2013	2431	1170	38879-0004001	31	2

CONFIRMATION NO. 3983

26161
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

FILING RECEIPT



Date Mailed: 10/02/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Philip John Steuart Gladstone, Carlisle, MA;
Alan Joseph Kirby, Hollis, NH;
John Matthew Truelove, Cambridge, MA;
David Feinzeig, Stoneham, MA;
Nagarjuna Venna, Waltham, MA;
Stephen Boyer, Waltham, MA;

Applicant(s)

BitSight Technologies, Inc., Cambridge, MA

Power of Attorney: The patent practitioners associated with Customer Number 26161

Domestic Applications for which benefit is claimed - None.

A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 09/24/2013

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/021,585**

Projected Publication Date: 03/12/2015

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

SECURITY RISK MANAGEMENT

Preliminary Class

726

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/021,585	09/09/2013	Philip John Steuart Gladstone	38879-0004001

26161
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

CONFIRMATION NO. 3983
POA ACCEPTANCE LETTER



Date Mailed: 10/02/2013

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/10/2013.

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.

/bnguyen/

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

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.

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 or equivalent) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5. If the Power of Attorney by Applicant form is not accompanied by this transmittal form or an equivalent, the Power of Attorney will not be recognized in the application.

Application Number	
Filing Date	
First Named Inventor	Philip John Steuart Gladstone
Title	SECURITY RISK MANAGEMENT
Art Unit	
Examiner Name	
Attorney Docket Number	38879-0004001

SIGNATURE of Applicant or Patent Practitioner

Signature	38879-0004001	Date	September 10, 2013
Name	Joel D. Couenhoven	Telephone	
Registration Number	68,848		

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

☒ *Total of 2 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.

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in the attached transmittal letter.

- ☒ I hereby appoint 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 equivalent).

26161

OR

- ☐ I hereby appoint Practitioner(s) named below 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 equivalent):

Name Registration	Number	Name Registration	Number

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

- ☐ The address associated with the above-mentioned Customer Number.

OR

- ☒ The address associated with Customer Number:

26161

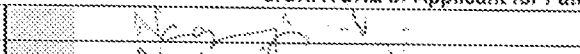
OR

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

I am the Applicant:

- ☐ Inventor or Joint Inventor
☐ Legal Representative of a Deceased or Legally Incapacitated Inventor
☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign
☐ 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)

SIGNATURE of Applicant for Patent

Signature		Date	9-9-13
Name	Nagaresha Venma	Telephone	617-215-0469
Title and Company	Founder, CEO, BitSight Technologies, Inc.		

NOTE: Signature - This form must be signed by the applicant or applicant's representative in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms for more than one signature, see below.

- ☒ *Total of 2 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.

Electronic Acknowledgement Receipt

EFS ID:	16809066
Application Number:	14021585
International Application Number:	
Confirmation Number:	3983
Title of Invention:	SECURITY RISK MANAGEMENT
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone
Customer Number:	26161
Filer:	Joel David Couenhoven/jennifer franco
Filer Authorized By:	Joel David Couenhoven
Attorney Docket Number:	38879-0004001
Receipt Date:	10-SEP-2013
Filing Date:	
Time Stamp:	12:41:14
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.pdf	1039600 96b1f3c9e97050dfb2b250fa4209a9a555731bb9	no	2

Warnings:

Information:

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.

Substitute Disclosure Form	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 38879-0004001	Application No.
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant BitSight Technologies, Inc.	
		Filing Date	Group Art Unit

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	1	Edmonds, Robert, "ISC Passive DNS Architecture", Internet Systems Consortium, Inc., March 2012 (18 pages).

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Electronic Patent Application Fee Transmittal

Application Number:				
Filing Date:				
Title of Invention:	SECURITY RISK MANAGEMENT			
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone			
Filer:	Joel David Couenhoven/Jennifer Franco			
Attorney Docket Number:	38879-0004001			
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Pages:				
Claims:				
Claims in excess of 20	2202	11	40	440
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 (\$)				1170

Electronic Acknowledgement Receipt

EFS ID:	16799845
Application Number:	14021585
International Application Number:	
Confirmation Number:	3983
Title of Invention:	SECURITY RISK MANAGEMENT
First Named Inventor/Applicant Name:	Philip John Steuart Gladstone
Customer Number:	26161
Filer:	Joel David Couenhoven/Denise Siede
Filer Authorized By:	Joel David Couenhoven
Attorney Docket Number:	38879-0004001
Receipt Date:	09-SEP-2013
Filing Date:	
Time Stamp:	16:35:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1170
RAM confirmation Number	4138
Deposit Account	061050
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /Zip	Pages (if appl.)
		Kit Ex 1002 Page 142 of 232			

1	Application Data Sheet	ADS.pdf	1491692	no	8
			b4fc678d0008ba583df5db7c53aa907b19a68fa8		
Warnings:					
Information:					
2	Transmittal of New Application	transmittal.pdf	77116	no	2
			8c328f42c9108020a670ff0b3a560a18cb788a06		
Warnings:					
Information:					
3		application.pdf	293249	yes	52
			af43c539775973a2b0afb322a49ba318ec6525c4		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	47	
	Claims		48	51	
	Abstract		52	52	
Warnings:					
Information:					
4	Drawings-only black and white line drawings	drawings.pdf	855385	no	16
			e07e9c91adf9bc8da3ceeb5196f9aa6d6fe77525		
Warnings:					
Information:					
5	Oath or Declaration filed	Declaration-final.pdf	4742566	no	6
			134d9fb56353bc30085edbb4fff44b35bb68f613		
Warnings:					
Information:					
6	Transmittal Letter	ids.pdf	36914	no	1
			1fd29d571b44ea6cb7b2dc25e75702049b031263		
Warnings:					
Information:					
7	Information Disclosure Statement (IDS) Form (SB08)	1449.pdf	66683	no	1
			e9d091f29165c92f730e30f636ba56504479beeb		
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
Black Kite Ex. 1002, Page 143 of 232					

8	Non Patent Literature	Edmonds.pdf	93931 3e5f11c413c2cb6affeb7e9fd05b9c5af18b28c1	no	18
Warnings:					
Information:					
9	Fee Worksheet (SB06)	fee-info.pdf	36500 9296c9556b65198823f25326a52f71f3c6ac398b	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			7694036		
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.					

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	38879-0004001
		Application Number	
Title of Invention	SECURITY RISK MANAGEMENT		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor 1					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Philip	John Steuart	Gladstone		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Carlisle	State/Province	MA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1		1005 Curve Street			
Address 2					
City	Carlisle	State/Province	MA		
Postal Code	01741	Country i	US		
Inventor 2					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Alan	Joseph	Kirby		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Hollis	State/Province	NH	Country of Residence i	US
Mailing Address of Inventor:					
Address 1		54 Ridge Road			
Address 2					
City	Hollis	State/Province	NH		
Postal Code	03049	Country i	US		
Inventor 3					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	John	Matthew	Truelove		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					

Application Data Sheet 37 CFR 1.76		Attorney Docket Number		38879-0004001	
		Application Number			
Title of Invention		SECURITY RISK MANAGEMENT			

City	Cambridge	State/Province	MA	Country of Residence i	US
------	-----------	----------------	----	------------------------	----

Mailing Address of Inventor:

Address 1	359 Harvard Street				
Address 2	Apt #2				
City	Cambridge		State/Province	MA	
Postal Code	02138	Country i	US		
Inventor 4					Remove
Legal Name					
Prefix	Given Name	Middle Name		Family Name	Suffix
	David			Feinzeig	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Stoneham	State/Province	MA	Country of Residence i	US

Mailing Address of Inventor:

Address 1	18 Emerson Street				
Address 2	Apt. 2				
City	Stoneham		State/Province	MA	
Postal Code	02180	Country i	US		
Inventor 5					Remove
Legal Name					
Prefix	Given Name	Middle Name		Family Name	Suffix
	Nagarjuna			Venna	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Waltham	State/Province	MA	Country of Residence i	US

Mailing Address of Inventor:

Address 1	324 Bishops Forest Drive				
Address 2					
City	Waltham		State/Province	MA	
Postal Code	02452	Country i	US		
Inventor 6					Remove
Legal Name					
Prefix	Given Name	Middle Name		Family Name	Suffix
	Stephen			Boyer	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Waltham,	State/Province	MA	Country of Residence i	US

Application Data Sheet 37 CFR 1.76		Attorney Docket Number		38879-0004001	
		Application Number			
Title of Invention		SECURITY RISK MANAGEMENT			
Mailing Address of Inventor:					
Address 1		299 Grove Street			
Address 2					
City	Waltham		State/Province	MA	
Postal Code	02453		Country i	US	
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add					

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	26161		
Email Address	apsi@fr.com	Add Email	Remove Email

Application Information:

Title of the Invention	SECURITY RISK MANAGEMENT		
Attorney Docket Number	38879-0004001	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	16	Suggested Figure for Publication (if any)	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.			
Please Select One: ☒ Customer Number ☐ US Patent Practitioner ☐ Limited Recognition (37 CFR 11.9)			
Customer Number	26161		

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	38879-0004001
		Application Number	
Title of Invention	SECURITY RISK MANAGEMENT		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. [Add](#)

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove			
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ^j (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. [Add](#)

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	38879-0004001
		Application Number	
Title of Invention	SECURITY RISK MANAGEMENT		

Authorization to Permit Access:

☐	Authorization to Permit Access to the Instant Application by the Participating Offices
If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application. In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application. In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.		
Applicant 1		Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.		
Clear		
☐ Assignee	☐ Legal Representative under 35 U.S.C. 117	☐ Joint Inventor
☒ Person to whom the inventor is obligated to assign.		☐ Person who shows sufficient proprietary interest
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:		
Name of the Deceased or Legally Incapacitated Inventor :		
If the Applicant is an Organization check here. ☒		
Organization Name	BitSight Technologies, Inc.	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	38879-0004001
		Application Number	
Title of Invention	SECURITY RISK MANAGEMENT		

Mailing Address Information:			
Address 1	125 Cambridge Park Drive		
Address 2	#104		
City	Cambridge	State/Province	MA
Country i	US	Postal Code	02140
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button. Add			

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1				
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
Remove				
If the Assignee is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information:				
Address 1				
Address 2				
City		State/Province		
Country i		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee Data may be generated within this form by selecting the Add button. Add				

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	38879-0004001
		Application Number	
Title of Invention	SECURITY RISK MANAGEMENT		

Signature:

Remove

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications					
Signature	/Joel D. Couenhoven/			Date (YYYY-MM-DD)	2013-09-09
First Name	Joel D.	Last Name	Couenhoven	Registration Number	68848
Additional Signature may be generated within this form by selecting the Add button.					Add

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.

FISH & RICHARDSON P.C.

Street Address
One Marina Park Drive
Boston, Massachusetts
02210-1878

Mail Address
P.O. BOX 1022
MINNEAPOLIS, MINNESOTA
55440-1022

Telephone
617 542-5070

Facsimile
877 769-7945

WEB SITE
WWW.FR.COM

Frederick P. Fish
1855-1930

W.K. Richardson
1859-1951

September 9, 2013

Attorney Docket No.: 38879-0004001

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

Presented for filing is a new patent application of:

Inventor(s): PHILIP JOHN STEUART GLADSTONE , ALAN JOSEPH KIRBY,
JOHN MATTHEW TRUELOVE, DAVID FEINZEIG, NAGARJUNA
VENNA AND STEPHEN BOYER

Title: SECURITY RISK MANAGEMENT

Enclosed are the following papers, including those required to receive a filing date
under 37 C.F.R. § 1.53(b):

	<u>Pages</u>
Specification	47
Claims	4
Abstract	1
Declaration	6
Drawing(s)	16

Enclosures:

- Application Data Sheet, 8 pages.
- Information Disclosure Statement, 1 page
Information Disclosure Statement Form PTO-1449, 1 page.

Applicant claims small entity status. See 37 CFR 1.27.

Basic Filing Fee			\$70
Search Fee			\$300
Examination Fee			\$360
Total Claims 31	over 20	11 x \$40	\$440
Independent Claims 2	over 3	0 x \$210	\$0



ATLANTA

AUSTIN

BOSTON

DALLAS

DELAWARE

HOUSTON

MUNICH

NEW YORK

SILICON VALLEY

SOUTHERN CALIFORNIA

TWIN CITIES

WASHINGTON, DC

Commissioner for Patents

September 9, 2013

Page 2

Fee for Multiple Dependent claims \$0

Application size fee for each 50 pages over 100

No (47 +16)*.75) - 100)/50 = No0 x \$0

Total Filing fee \$1170

The filing fee in the amount of \$1170 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply all charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 38879-0004001.

If this application is found to be incomplete, or if a telephone conference would otherwise be helpful, please call the undersigned at (617) 542-5070.

Please direct all correspondence to the following:

26161

PTO Customer Number

Respectfully submitted,

/Joel D. Couenhoven/

Joel D. Couenhoven

Reg. No. 68,848

Enclosures

JGC/juf

23085758.doc

FISH & RICHARDSON P.C.

Street Address
One Marina Park Drive
Boston, Massachusetts
02210-1878

Mail Address
P.O. BOX 1022
MINNEAPOLIS, MINNESOTA
55440-1022

Telephone
617 542-5070

Facsimile
877 769-7945

WEB SITE
WWW.FR.COM

Frederick P. Fish
1855-1930

W.K. Richardson
1859-1951

September 9, 2013

Attorney Docket No.: 38879-0004001

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

Presented for filing is a new patent application of:

Inventor(s): PHILIP JOHN STEUART GLADSTONE , ALAN JOSEPH KIRBY,
JOHN MATTHEW TRUELOVE, DAVID FEINZEIG, NAGARJUNA
VENNA AND STEPHEN BOYER

Title: SECURITY RISK MANAGEMENT

Enclosed are the following papers, including those required to receive a filing date
under 37 C.F.R. § 1.53(b):

	<u>Pages</u>
Specification	47
Claims	4
Abstract	1
Declaration	6
Drawing(s)	16

Enclosures:

- Application Data Sheet, 8 pages.
- Information Disclosure Statement, 1 page
Information Disclosure Statement Form PTO-1449, 1 page.

Applicant claims small entity status. See 37 CFR 1.27.

Basic Filing Fee			\$70
Search Fee			\$300
Examination Fee			\$360
Total Claims 31	over 20	11 x \$40	\$440
Independent Claims 2	over 3	0 x \$210	\$0



ATLANTA

AUSTIN

BOSTON

DALLAS

DELAWARE

HOUSTON

MUNICH

NEW YORK

SILICON VALLEY

SOUTHERN CALIFORNIA

TWIN CITIES

WASHINGTON, DC

Commissioner for Patents
September 9, 2013
Page 2

Fee for Multiple Dependent claims	\$0
Application size fee for each 50 pages over 100 No (47 +16)*.75) - 100)/50 = No0 x	\$0
Total Filing fee	\$1170

The filing fee in the amount of \$1170 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply all charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 38879-0004001.

If this application is found to be incomplete, or if a telephone conference would otherwise be helpful, please call the undersigned at (617) 542-5070.

Please direct all correspondence to the following:

26161
PTO Customer Number

Respectfully submitted,

/Joel D. Couenhoven/

Joel D. Couenhoven
Reg. No. 68,848
Enclosures
JGC/juf
23085758.doc

SECURITY RISK MANAGEMENT

This application relates to United States patent application serial 13/240,572, filed on September 22, 2011, which is incorporated in its entirety here by this reference.

BACKGROUND

5 This description relates to security risk management.

Security risks faced by an entity, for example information security risks, often include security risks associated with other entities with which it communicates or collaborates. The first entity may evaluate the magnitude of the risks associated with the other entities to make decisions about its relationships with those other entities.

10 SUMMARY

The security risk management that we describe here may encompass one or more of the following (and other) aspects, features, and implementations, and combinations of them.

In general, in an aspect, traces are received of activities of an online user who is associated with an entity. By analysis of the traces a security state of the entity is inferred.

15 Implementations may include one or any combination of two or more of the following features. The traces indicate successful attacks on computer systems of the entity. Traces that represent a less satisfactory security state of the entity are differentiated from traces that represent a more satisfactory security state of the entity. The analysis includes a comparison of traces that originated in different contexts of the user's online activities.

20 The different contexts include different times. The traces that originated at one of the times reflect a user deletion relative to the traces that originated at an earlier time. The traces that originated at one of the times reflect a user deletion of malicious data or code relative to the traces at the earlier time.

25 The different contexts include a context the security of which is controlled by the entity and a context the security of which is at least partly uncontrolled by the entity. The controlled context includes a computer system or device made accessible by the entity to the user, and the partly uncontrolled context includes a computer system or device owned by the user.

The traces include tracking of an identity of an online user between the two different contexts. The tracking includes cookies associated with advertising directed to the online user.

The traces include indications of security checks made with respect to communications associated with the user. The security checks include indications of whether email messages conform to DomainKeys Identified Mail (DKIM) standards or the email domains conform to the Sender Policy Framework (SPF).

In general, in an aspect, a map is generated between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets. At least part of the generating of the map is done automatically. A user can be engaged to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities.

Implementations may include one or any combination of two or more of the following features. The technical assets include network-related information. The network-related information includes at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server configurations, domain names, social media handles, third-party data hosting, Internet service providers, Domain Name System (DNS) services, Autonomous System numbers, and Border Gateway Protocol (BGP) advertisements. The activity of generating the map includes online discovery of information about the technical assets. The information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry (RIR). The information about the technical assets is discovered through passive DNS queries. Associations between domain names and network addresses are identified from the passive DNS queries. Changes are tracked over time in the network addresses that are associated with a given domain name.

The activity of identifying associations between domain names and network addresses from the passive DNS queries includes one or a combination of any two or more of the following. A first domain name for an entity is received from the entities. A first passive DNS query is sent to identify first name servers for the first domain name. A list is received of the first name servers for the first domain. A second passive DNS query is sent, for each

of the first name servers, to identify second domain names for which the name server is authoritative. A list is received, for each of the first name servers, of the second domain names for which the name server is authoritative. A third passive DNS query, for each of the second domain names, is sent to identify host names for the hosts of the second domain name and Internet Protocol addresses for the host names. A list is received of the host names and the Internet Protocol addresses for the host names. And each of the Internet Protocol addresses is mapped to an attribute for the entity.

Non-technical-asset information is presented to the user through the user interface. The non-technical-asset information includes information about the entities. The information about the entities includes at least one of descriptions of entities, industry classifications, and employee counts. The tool enables the user to assign a technical asset to an entity. External crowd-sourced services are invoked to aid in generating the map. A separate review and approval is done of entities proposed to be included in the map. The map is provided to an application for joining to event data or for scoring the security state of the entities. The part of the generating of the map that is done automatically includes at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map. Graphs of relationships among entities are generated based on their associations with technical assets. These and other aspects, features, and implementations, and combinations of them, may be expressed as apparatus, methods, methods of doing business, means or steps for performing functions, components, systems, program products, and in other ways.

The subject matter described in this specification can be implemented in particular embodiments so as to realize one or more of the following advantages. By understanding the nature and degree of security risks associated with other entities, an entity can evaluate, analyze, and reduce its own risk. In some implementations, analysis of traces of online activities of users may represent security policies or vulnerabilities of the entities that employ the users. In some implementations, analysis of traces of online activities may identify information associated with multiple entities more quickly, more accurately, and more privately than gathering data directly from the multiple entities. In some implementations, a map of technical and non-technical assets for an entity may be used to determine a security rating for the entity. In some implementations, technical data may be retrieved and mapped

to an entity in a manner not previously available. In some implementations, the security risks of an entity may be analyzed or determined without involvement of the entity.

In some implementations, the use of automation in a data mapping process or a data approval process may reduce the likelihood of error in the mapping process. In some implementations, the use of an automated or semi-automated analysis process may allow automated maintenance of an entity map and may reduce the likelihood of errors in the entity map because of outdated data. In some implementations, an automated maintenance process is automatically initiated upon identification of changes in entity data. In some implementations, the use of an automated or semi-automated analysis process allows mapping of data to entity attributes for a greater number of entities in a shorter period of time than a completely manual analysis process.

In some implementations, the use of passive Domain Name System (DNS) data may identify network services that are hosted on shared hosting services. In some implementations, the identification of network services that are hosted on shared hosting services may indicate that an Internet Protocol address should not be associated with a single entity but should be associated with multiple entities. In some implementations, when the same data is mapped to attributes for different entities, e.g., when a single Internet Protocol address is associated with multiple entities, the security ratings of the different entities are related, e.g., based on the security ratings of the other entities that have the same attribute data. In some implementations, the use of the same shared hosting service by multiple entities indicates a less satisfactory security posture and the security ratings of the multiple entities are lower than if each of the multiple entities used separate hosting services.

Other aspects, features, and advantages will be apparent from the description and the claims.

DESCRIPTION

Figures 1-5, 13, and 17 are block diagrams.

Figures 6-12 are examples of user interfaces.

Figures 14-16 are flow diagrams.

In the system and techniques that we describe here, an entity may obtain and use security analysis data from an analysis system to determine its own security risk or the security risk associated with a different entity with which the entity may communicate or have a relationship involving sensitive or confidential information. Sometimes we refer to an
5 “entity” or “entities” in our discussion; we mean this phrase broadly to include, for example, individuals or businesses that communicate electronically with other individuals or businesses and have electronic data. The information security analysis data may be used by an entity to identify potential areas of improvement for its own security risk or to decide that sensitive information should not be provided to another entity that is associated with
10 unacceptable security vulnerabilities. We sometimes refer to “information security risk” in our discussion; we mean this phrase broadly to include, for example, any kind of security risk that may be evaluated using the system and techniques that we describe here.

The analysis system may receive and analyze technical and non-technical data or assets to determine a security rating of an entity. We use the term security rating in its
15 broadest sense to include, for example, any kind of absolute or relative ranking, listing, scoring, description, or classification, or any combination of them, of an entity with respect to characteristics of its security state. For example, the analysis system may identify an entity associated with the received data, map the received data to attributes for the entity, such as contact information and the number of employees employed by the entity, and
20 determine a security rating for the entity using the mapped data.

Some examples of received data may include traces of online activity associated with an entity. For example, the analysis system may analyze logs of online activity of employees of an entity or one or more settings of servers that host data for the entity to determine a security rating for the entity.

25 The online activity and the settings include data that is publicly or commercially available. For example, the online activity may include public interactions of employees with social networking systems, publicly available information associated with cookies stored on a device operated by an employee, or publicly available security settings for a mail server that hosts the entity’s electronic mail. The publicly available data may be retrieved
30 from a Domain Name Server or an industry intelligence company to name two examples.

Figure 1 is a block diagram of an example environment 100 for assigning a security rating and a confidence score to an entity. The environment 100 includes a server 102 that receives data from data sources 104. The data sources 104 include technical data sources 106 and non-technical data sources 108, described in more detail below. (We sometimes refer to technical data as technical assets and to non-technical data as non-technical assets.)

The server 102 acquires and analyzes data from the technical data sources 106 and the non-technical data sources 108 to identify data associated with entities. For example, the server 102 selects a subset of the data received from the data sources 104, identifies the entity associated with the subset of the data, and maps a relationship between the subset of the data and the identified entity.

The server 102 stores some of the received data in a database 110. For example, the server 102 stores entity names 112, security ratings 114 for the entities identified by the entity names 112, and confidence scores 116 in the database 110, where each of the confidence scores 116 corresponds with one of the security ratings 114.

The confidence scores 116 may represent the confidence of a corresponding security rating, from the security ratings 114. For example, each of the confidence scores 116 may represent the confidence of the server 102 in the corresponding security rating. The server 102 may use any appropriate algorithm to determine the security ratings 114 and the corresponding confidence scores 116 or other values that represent a security rating of an entity.

An entity may use one of the security ratings 114 and the corresponding one of the confidence scores 116 to determine its own security rating or the security rating of another entity with which the entity may communicate. For example, if the entity has a poor security rating, the entity may determine steps necessary to improve its own security rating and the security of its data. The entity may improve its security to reduce the likelihood of a malicious third party gaining access to its data or creating spoofed data that is attributed to the entity or an employee of the entity.

In some examples, an entity may determine whether or not to communicate with another entity based on the other entity's security rating. Sometimes in our discussion we refer to the entity that is being rated as the "target entity" and the entity that is using the rating as the "at-risk entity". For example, if the target entity has a low security rating, the

at-risk entity may determine that there is a greater likelihood that documents sent to the target entity may be accessed by a user who is not authorized to access the documents compared to documents sent to a different target entity that has a higher security rating.

The at-risk entity may compare the security ratings of two competitive target entities to determine the difference between the security ratings of the competitors and with which of the competitors the entity should communicate or engage in a transaction, based on the security ratings. For example, the at-risk entity may require a third party audit and select one of the two competitors for the audit based on the security ratings of the competitors, potentially in addition to other factors such as price, recommendations, etc.

In some implementations, the server 102 includes the database 110. For example, the database 110 is stored in a memory included in the server 102. In some implementations, the database 110 is stored in a memory on a device separate from the server 102. For example, a first computer may include the server 102 and a second, different computer may include the memory that stores the database 110. In some implementations, the database 110 may be distributed across multiple computers. For example, a portion of the database 110 may be stored on memory devices that are included in multiple computers.

In some implementations, the server 102 stores data received from the data sources 104 in memory. For example, the server 102 may store data received from the data sources 104 in the database 110 or in another database.

In some implementations, the security rating for an entity is associated with the security of electronic data of the entity. In some implementations, the security rating for an entity is associated with the security of electronic and non-electronic data of the entity.

Figure 2 is an example of an environment 200 that assigns a security rating and a confidence score to an entity. For example, during time T_0 the server 102 identifies an entity 218 (or the entity is identified by a user of the server), "Sample Entity," for which the server 102 will determine a security rating and a corresponding confidence score.

The server 102 may identify a target entity that is not currently assigned a security rating or an entity that was assigned a previous security rating. The server 102 may identify an entity that was assigned a previous security rating based on new or updated data for the entity or based on a request for an updated security rating, e.g., from an at-risk entity. In the

example shown in Figure 2, the server 102 has identified an entity that is not currently assigned a security rating.

During time T_1 , the server 102 receives data from the data sources 104, including data for the identified entity. For example, the server 102 identifies a subset of the received data that is associated with the identified entity. The subset of the received data may be associated with the identified entity based on each of the distinct portions of the subset including the name of the identified entity, e.g., "Sample Entity," or a name or word associated with the identified entity, e.g., the name of a subsidiary, an acronym for the identified entity, or a stock symbol of the identified entity, among others.

The duration of the time period T_1 may be any length of time. For example, the time period T_1 may have a duration of seconds, minutes, or days. As other examples, the time period T_1 may be months or years long. Note that, although the time periods shown in Figure 2 do not overlap, in some cases they can overlap for a given target entity and are likely to overlap for the application of the system to multiple target entities.

The server 102, during time T_2 , maps the subset of the received data that is associated with the identified entity to attributes 220 for the identified entity. For example, when the server 102 determines that the identified entity currently employs sixty-three employees, the server may assign the value of sixty-three to an "employees" attribute of the identified entity in the database. In some examples, the server 102 may determine one or more industries for the identified entity, such as "Computer Networking." The industries may represent the type of products and/or services offered by the identified entity. Standard industry codes can be used for this purpose.

The duration of the time period T_2 may be any length of time. For example, the time period T_2 may have a duration of seconds, minutes, or days. As other examples, the time period T_2 may be months or years long.

In some implementations, as the server 102 receives portions of the subset of data, if the server determines that each of the portions is associated with the identified entity, the server 102 maps the received portions to the attributes 220 for the identified entity. For example, the server 102 may automatically map data to an "employees" attribute based on received data and then automatically map data to an "industry" attribute.

In some examples, the server 102 may update one or more of the attributes 220 as the server 102 receives additional data associated with the identified entity. For example, the server 102 may determine that the identified entity sells “computer networking products” and then determine that the identified entity also offers “computer networking services.” The server 102 may associate the industry “computer networking products” with the identified entity first based on the data that indicates that the identified entity sells computer network products, then associate the industry “computer networking services” with the identified entity based on the data that indicates that the identified entity also offers computer networking services.

Based on the data mapped to the attributes 220 for the identified entity, the server 102 determines one or more scores 222 for the identified entity during time period T_3 . For example, the server 102 determines a security rating and a corresponding confidence score for the identified entity “Sample Entity.”

The server 102 may use some or all of the attributes 220 for the identified entity when determining the score 222 for the identified entity. For example, the server 102 may use an industry assigned to the identified entity as one factor to determine the security rating of the identified entity.

In some examples, the server 102 may determine weights for the attributes 220 where the weights represent the influence of the corresponding attribute on the security rating. For example, the number of employees employed by an entity may be assigned a greater weight than the industries of the products or services offered by the entity.

In some implementations, the weights may vary based on the values of the attributes. For example, when an entity has few employees, a weight corresponding to the number of employees may be smaller than if the entity had a greater number of employees.

The server 102 may provide the security rating and the corresponding confidence score of the identified entity to one or more other entities. For example, an at-risk entity may request the security rating and the corresponding confidence score for the identified target entity as part of a security analysis process for the identified target entity by the at-risk entity.

In some implementations, as mentioned earlier, one or more of the time periods T_0 , T_1 , T_2 , and T_3 may overlap. For example, the server 102 may request data from the data sources 104, receive some of the requested data during time T_1 , identify the entity 218 during

time T_0 , and then receive more of the requested data during time T_1 . In some examples, the server 102 may map some of the requested data to the identified entity during time T_2 and while continuing to receive data from the data sources during time T_1 . In some examples, the server 102 may determine the scores 222 for the identified entity during time T_3 while
5 continuing to receive data from the data sources 104 during time T_1 and mapping the received data to the identified entity during time T_2 .

In some implementations, the server 102 may identify the entity 218 based on a request for a security rating for the entity 218 from a third party. In some implementations, the server 102 may identify the entity 218 automatically. For example, the server 102 may
10 determine that the server 102 has received more than a predetermined threshold quantity of data for the entity 218 and that the server 102 should analyze the data to determine the scores 222. In some implementations, an operator of the server 102 may identify the entity 218. For example, the operator may provide the server 102 with a list of entities for which the server 102 should determine the scores 222. In some examples, the list of entities may
15 include a predetermined list of entities, such as Fortune 500 or Fortune 1000 companies.

Figure 3 is a block diagram of an example environment 300 of data sources for an analysis system 302. For example, the data sources may include technical and non-technical data sources. After the analysis system 302 receives data from one or more of the data sources, the analysis system 302 may perform an automatic analysis process 304, a manual
20 analysis process 306, or a semi-automatic analysis process using the received data, or a combination of any two or more of those.

Non-technical data may be used manually to disambiguate between entities and determine relationships between entities. Non-technical data may be received automatically from public and commercial data sources.

25 The automatic analysis process 304 may include the analysis system 302 automatically identifying data associated with an entity based on data received from the data sources, without input or intervention from an operator, e.g., an operator of the analysis system 302. We sometimes refer to such an operator as a mapper. In some examples, the automatic analysis process 304 may include collecting data from the data sources and
30 approving proposed portions of a mapping between data received from the data sources and attributes of an entity.

The manual analysis process 306 may include presentation of data to an operator of the analysis system 302, e.g., a computer executing the analysis system 302, where the operator maps associations between the received data and one or more entities.

The semi-automatic analysis process may include a combination of the automatic analysis process 304 and the manual analysis process 306. For example, the automatic analysis process 304 may map some of the received data to an entity and present information associated with the mapping to an operator for approval. In addition, the operator may acquire and review received data, and manually map data to a target entity.

The environment 300 includes an Internet Assigned Numbers Authority 308 (IANA) as one of the technical data sources. The analysis system 302 may request data from the Internet Assigned Numbers Authority 308 to determine an Internet Protocol (IP) address range 310 associated with an entity. For example, the analysis system 302 may determine a domain name for a website of an entity and provide the domain name to a Domain Name Server 316. In response the analysis system 302 may receive the Internet Protocol address of the website from the Domain Name Server 316, e.g., the Internet Protocol address assigned to the domain name, and provide the Internet Protocol address to the Internet Assigned Numbers Authority 308. The Internet Assigned Numbers Authority 308 may then provide the analysis system 302 with an Internet Protocol address range that includes the Internet Protocol address that was provided to the Internet Assigned Numbers Authority 308.

Similarly, the analysis system 302 may query a Regional Internet Registry 312 for one or more Internet Protocol address ranges 314. For example, the analysis system 302 may provide an Internet Protocol address to the African Network Information Centre (AfriNIC), the American Registry for Internet Numbers (ARIN), the Asia-Pacific Network for Information Centre (APNIC), the Latin America and Caribbean Network Information Centre (LACNIC), or Réseaux IP Européens Network Coordination Centre (RIPE NCC) and receive the Internet Protocol address ranges 314 in response to the query.

The Internet Protocol address ranges 310 and the Internet Protocol address ranges 314 may include one or more Internet Protocol addresses. For example, when a single Internet Protocol address is assigned to a domain name, the Internet Protocol address ranges 310 or the Internet Protocol address ranges 314 may include only the single Internet Protocol address.

In some examples, one or both of the Internet Protocol address ranges 310 and 314 may include multiple ranges. For example, when the Internet Assigned Numbers Authority 308 or the Regional Internet Registry 312 receive multiple domain names, the Internet Protocol address ranges 310 or 314 may include multiple ranges of Internet Protocol address, where each range corresponds to at least one of the multiple domain names.

In some implementations, the Domain Name Server 316 may be an authoritative name server 318. For example, the authoritative name server 318 may be responsible for mapping Internet Protocol addresses to one or more particular domain names.

In some implementations, a passive Domain Name Server 330 may receive passive DNS queries from the analysis system 302. For example, the passive Domain Name Server 330 may be hosted on a different computer than the Domain Name Server 316. In some examples, the passive Domain Name Server 330 is hosted on the same computer or computers as the Domain Name Server 316.

The passive Domain Name Server 330 may include a cache of previous DNS queries and results for the previous DNS queries. In some examples, the passive Domain Name Server 330 may include historical data that indicates a specific date that an Internet Protocol address was associated with a specific domain name.

The analysis system 302 may query the passive Domain Name Server 330 to determine domain names that were associated with specific Internet Protocol addresses, the dates that the domain names were associated with the specific Internet Protocol addresses, and any changes in the Internet Protocol addresses that were assigned to a domain name. This may allow the analysis system 302 to determine other domain names that were associated with the same Internet Protocol addresses at the same time, and other Internet Protocol addresses associated with domain names, to name a few examples.

For example, the analysis system 302 may receive data from the passive Domain Name Server 330 that indicates whether or not a single Internet Protocol address is associated with multiple domain names. In some examples, the analysis system 302 may determine that a single server or group of servers host multiple websites when multiple domain names were associated with a single Internet Protocol address.

In some implementations, when a single server or group of servers host multiple websites, the entities associated with the websites hosted by a single server or group of servers may be assigned a lower security rating than if an entity had a dedicated server for its website. For example, when an entity uses a cloud based server to host the entity's website, the use of the cloud based server may indicate that the entity is more susceptible to information based attacks than if the entity used a server that only hosted the entity's website.

The analysis system 302 may receive social media data 320 from social media networks. For example, the analysis system 302 may monitor or subscribe to a social media network and store the social media data 320 in a memory, e.g., of a computer that executes the analysis system 302 or another computer. The analysis system 302 may identify one or more handles 322 in the social media data 320 that are associated with one or more entities. The analysis system 302 may use the handles 322 to identify data associated with the entities and determine one or more security attributes for the entities based on the social media data 320 as described in more detail below.

The analysis system 302 may receive trace information associated with a user device 324 that represents online activity of the user device 324. The trace information may be used by the analysis system 302 to determine one or more security policies of an entity or entities that employ an operator of the user device 324. For example, the analysis system 302 may receive a data about one or more cookies 326 stored in a memory of the user device 324, as described in more detail below, and determine that an entity allows employees to access confidential data using devices owned by the employees.

A mail server 328 may provide the analysis system 302 with information about one or more security settings for the email communications of an entity. For example, the analysis system 302 may determine whether the mail server 328 uses Sender Policy Framework (SPF) and/or DomainKeys Identified Mail (DKIM) for electronic mail communications.

In some implementations, when an entity does not use one or both of SPF and DKIM, the analysis system 302 assigns the entity a lower security rating than if the entity used one or both validation methods. For example, a first entity that uses both SPF and DKIM may have a higher security rating than a second entity that only uses SPF, assuming that all other attributes for the first and second entities are the same. In some examples, the analysis

system 302 may determine whether the mail server 328 uses one or more validation methods other than SPF or DKIM.

The environment 300 includes one or more news articles 332 as one of the sources of non-technical data. The news articles 332 may provide the analysis system 302 with contact
5 information, one or more industry classifications, and an entity description. In some examples, the news articles 332 may provide the analysis system 302 with technical data, such as data about a recent security breach at an entity.

In some implementations, the news articles 332 may include information about corporate relationships between entities. For example, the news articles 332 may indicate
10 that an entity may be purchased by another entity or is a subsidiary of another entity.

The analysis system 302 may use the corporate relationship information or data about a recent security breach when determining a security rating for an entity. For example, when an entity is a subsidiary of another entity with a low security rating, the entity may be assigned a lower security rating than if the entity was not a subsidiary of the other entity. In
15 some examples, an entity is assigned a lower security rating based on a news article about a recent security breach compared to another entity that does not have a recent news article about any security breaches, assuming all other attributes of both entities are equal.

A stock ticker 334 for an entity may be used by the analysis system 302 to determine financial information about an entity or data associated with the stock ticker but not the entity
20 name. For example, the analysis system 302 may identify data associated with the entity based on the entity's stock ticker that would not otherwise have been identified.

One or more corporate filings 336 may be used to determine data about an entity, such as one or more subsidiaries or affiliates of the entity, and/or contact information of the entity.

In some examples, the analysis system 302 may determine an aggregate security rating for an entity and the entity's subsidiaries based on a relationship between the entity and the entity's subsidiaries. For example, if the entity does not have any influence over the entity's subsidiaries, the analysis system 302 may determine that an aggregate security rating would not be representative of the relationship between the entity and the entity's
25 subsidiaries. In some examples, when the entity and the entity's subsidiaries share one or more physical places of business, the analysis system 302 may determine that an aggregate
30

security rating for the entity and the entity's subsidiaries more accurately reflects the data security of the entity and the entity's subsidiaries.

The analysis system 302 may receive a number of employees 338 and contact information 340 for an entity. In some implementations, the analysis system 302 determines
5 a security rating for an entity based on the number of employees 338 and/or the contact information 340. For example, the analysis system 302 may determine that the physical location of an entity is in an area of low crime and associate the entity with a higher security rating than if the entity was physically located in a location or locations of higher crime.

One or more industry classifications 342 for an entity may be used by the analysis
10 system 302 to determine other entities that operate in the same field as the entity. For example, the analysis system 302 may use the industry classifications 342 and/or information about the other entities that operate in the same field when determining a security rating for the entity.

An entity description 344 may be received from a data source such as the entity's
15 website, a news article, or a corporate filing, to name a few examples. The entity description 344 may be used by the analysis system 302 to provide a user with information about an entity. For example, an operator of the analysis system 302 may use the entity description 344 during the manual analysis process 306 to determine whether data identified as potentially associated with an entity is actually associated with the entity. In some examples,
20 the operator may determine that received data is associated with a different industry classification or not related to the entity description 344 and should not be mapped to an attribute of an entity.

In some implementations, the Internet Assigned Numbers Authority 308, the
25 Regional Internet Registry 312, the Domain Name Server 316, the social media data 320, the user device 324, the mail server 328, and the passive Domain Name Server 330 are all sources of technical data. For example, the sources of technical data include data about computer systems and/or computer activities associated with entities.

One or more of the sources of technical data may provide the analysis system 302 with trace data. For example, one of the sources of technical data, such as the social media
30 data 320, may provide the analysis system 302 with data that represent online activities associated with an entity.

In some implementations, the trace data represent online activities but do not include the actual content of the online activities. For example, when a user posts data on a social media network, the analysis system 302 may receive information about the date and time of the post but not the actual content of the post.

5 In some implementations, the news articles 332, the stock ticker 334, the corporate filings 336, the number of employees 338, the contact information 340, the industry classification 342, and the entity description 344 are all sources of non-technical data.

In some implementations, a single source of data may provide the analysis system 302 with both technical and non-technical data. For example, the Regional Internet Registry
10 312 may provide the analysis system 302 with the Internet Protocol address ranges 314 and the contact information 340.

In some implementations, a single source of data may provide the analysis system 302 with multiple different types of data. For example, the corporate filings 336 may provide the analysis system 302 with the number of employees 338, the contact information
15 340, and one or more domain names.

In some implementations, the automatic analysis process 304 or the semi-automatic analysis process acquire Regional Internet Registry registration data, Autonomous System numbers, Internet Protocol address blocks, and Border Gateway Protocol advertisements in an automated fashion. For example, the automatic analysis process 304 or the semi-
20 automatic analysis process may add Regional Internet Registry registration data, Autonomous System numbers, Internet Protocol address blocks, and Border Gateway Protocol advertisements to a mapping of data to entity attributes. In some examples, the automatic analysis process 304 or the semi-automatic analysis process includes a rule-based system that is used to determine which data to include in an entity map and which data to
25 discard. In some examples, the semi-automatic analysis process may require human interaction for the mapping of the Regional Internet Registry registration data, Autonomous System numbers, Internet Protocol address blocks, and Border Gateway Protocol advertisements to one or more entity attributes.

In some implementations, the environment includes an Autonomous System assigned
30 to an entity. For example, the analysis system 302 may identify an Autonomous System based on the Internet Protocol address ranges 310 or 314. The Autonomous System may

broadcast the Internet Protocol addresses that the Autonomous System owns, controls, or to which the Autonomous System has routes.

The analysis system 302 may infer relationships between entities based on the Autonomous System. For example, the analysis system 302 may identify a route between an Autonomous System and an Internet Protocol address for another Autonomous System and infer a relationship between the entity that controls the Autonomous System and another entity that controls the other Autonomous System.

In some examples, when a first Internet Protocol address and a second Internet Protocol address are both assigned to the same Autonomous System and are associated with a first domain and a second domain, respectively, the analysis system 302 may determine that there is a relationship between a first entity that controls the first domain and a second entity that controls the second domain. For example, the analysis system 302 may determine that both entities use a shared hosting service.

In some implementations, the analysis system 302 may use Border Gateway Protocol (BGP) data to determine the Internet Protocol addresses that an entity uses. For example, the analysis system 302 may receive a BGP advertisement that identifies an Internet Protocol address for an Autonomous System and indicates that the Internet Protocol address is currently in use by the entity. The analysis system 302 may use the Internet Protocol use data to determine which Internet Protocol addresses an entity is actively using and which Internet Protocol addresses assigned to the entity are not in use. The analysis system 302 may determine the security rating for the entity based on the Internet Protocol addresses the entity is using.

In some implementations, the analysis system 302 may update an entity mapping on a daily basis, or in some cases more or less frequently than daily. For example, the analysis system 302 may determine that some data associated with an entity changes at least every day and that the mapping for the entity should be updated accordingly. In some examples, BGP advertisements for a particular entity change on a daily basis and represent changes in entity data, e.g., technical data. For example, the analysis system 302 may receive a first BGP advertisement containing first data and later receive a second BGP advertisement that contains second data which indicates a change to the first data. The analysis system 302 may

use the changes in the entity mapping, such as the changes to the entity's BGP advertisements, when determining a security rating for the entity.

In some implementations, the automatic analysis process 304 or the semi-automatic analysis process may approve a mapping for an entity. For example, the automatic analysis process 304 may approve an entity mapping by comparing similar data obtained through two separate data sources, evaluating the data to determine a similarity score that represents the similarity of the data, and comparing the similarity score to a predetermined similarity threshold. For example, an Internet Protocol address block obtained from a Border Gateway Protocol advertisement may be compared to its corresponding Regional Internet Registry registration to determine the similarity between the Internet Protocol address blocks and any data associated with the Internet Protocol address blocks.

In some examples, when the similarity score is greater than the predetermined similarity threshold, the automatic analysis process 304 or the semi-automatic analysis process automatically approve the mapping of the Internet Protocol address blocks. In some examples, when the similarity score is not greater than the predetermined similarity threshold, the automatic analysis process 304 or the semi-automatic analysis process do not approve the mapping of the Internet Protocol address blocks.

Figure 4 is an example of an environment 400 identifying a removal of social media data from a social media network. During time T_0 , a user device 402 sends a post C 404 to a social networking system 406. For example, the social networking system 406 places the post C 404 on a webpage associated with an operator of the user device 402 or provides the post C 404 to one or more users that receive content posted to the social networking system 406 by the operator of the user device 402.

A server 408, during time T_1 , logs data associated with the post C 404. For example, the server 408 stores a record in a database 410 where the record indicates that the operator placed the post C 404 on the social networking system 406 at a specific time.

In some implementations, the database 410 includes a log 412 associated with the operator of the user device 402. For example, the database 410 includes a log for each employee of an entity. In some examples, the database 410 includes a log for each entity, where a single log includes records for the online activities of all employees employed by a

single entity. In some examples, the log 412 includes records for an entity and all of the entity's subsidiaries. In some implementations, the database 410 includes a single log 412.

The time period T_1 may occur immediately after the time period T_0 . In some implementations, the time period T_1 occurs according to a schedule. For example, the server 408 may log the online activity of the user device 402 once a day at a predetermined time. In some examples, the server 408 logs multiple activities during the time period T_1 . For example, when the server 408 logs the online activity of the user device 402 once a day the server 408 may identify multiple activities, such as social media posts, blog posts, and/or forum posts, and record all of the multiple activities in the database 410 during the time period T_1 .

The operator of the user device 402, during time T_2 , removes the post C 404 from the social networking system 406; and, during time T_3 , the server 408 logs the removal of the post C 404 and analyzes the log 412. For example, the server 408 analyzes the social networking system 406 during time T_3 and determines that the post C 404 is no longer on the social networking system 406 and that the operator of the user device 402 likely removed the post C 404.

The server 408 may record the removal of the post C 404 to identify which posts or online activity included in the log 412 have changed. For example, when the server 408 determines that a large quantity of posts associated with the operator of the user device 402 have been removed from the social networking system 406, the server 408 may determine that the operator's social networking account may have been compromised.

The server 408 may determine, based on the social media accounts of employees employed by an entity, a security rating of the entity. For example, the security rating of the entity may be lower when the server 408 determines that a social media account of an employee of the entity was compromised than if the server 408 determined that no social media accounts for employees of the entity were compromised.

In some implementations, the server 408 monitors the social media accounts of employees of an entity that make statements on behalf of the entity. For example, the server 408 may monitor the social media accounts of public relations employees. In some examples, when the user posts information online on behalf of the entity and a social media

account of the user is compromised, the server 408 may determine that the entity has a lower security rating than if the user's social media account was not compromised.

In some examples, when the server 408 determines that the post C 404 is substantially identical to the post B, the server 408 determines that the operator of the user device 402 may have posted the same content to the social networking system 406 on accident and determine based on the removal of the post C 404 that the likelihood that operator's social networking account was compromised is low.

In some implementations, the server 408 monitors one or more webpages of an entity. The server 408 may determine whether changes to the webpages were made maliciously or otherwise indicate a potential security vulnerability of the entity. Upon determining that a change to a webpage of the entity indicates a potential security vulnerability of the entity, the server 408 may assign the entity a lower security rating than the entity may have otherwise been assigned.

In some implementations, one or more of the time periods T_0 , T_1 , T_2 , and T_3 may overlap. For example, the server 408 may log a post B in the database 410 while the user device 402 provides the post C 404 to the social networking system 406. In some examples, the user device 402 may remove the post C 404 from the social networking system 406 while the server 408 logs the post C 404 and/or while the server 408 analyzes the log 412. In some examples, the server 408 may log the post C 404 while the server 408 is analyzing data previously recorded in the log 412.

The duration of the time periods T_0 , T_1 , T_2 , and T_3 may be any length of time. For example, the time period T_1 may have a duration of seconds, minutes, or days. As other examples, the time period T_1 may be months or years long.

Figure 5 is a block diagram of an example environment 500 of an analysis system 502 receiving traces of activities of an online user who is associated with an entity. For example, a cookie tracking system 504 may provide a user device 506 and an entity device 508 with cookies 510 and 512, respectively, and may record information about the cookies 510 and 512 in one or more logs 514. In some examples, the logs 514 may include an IP address of the user device 506 when the user device accesses content, such as an advertisement or a website.

The analysis system 502 may receive a portion of the logs 514, such as data indicating that the user device 506 accessed a particular website from a first IP address, e.g., based on a cookie associated with an advertisement, and that the user device 506 accessed the same particular website from a second IP address. In some implementations, the data does not include any identification information of the particular user device.

The analysis system 502 may determine that either the first IP address or the second IP address are associated with an entity, e.g., based on an assignment of a block of IP address including the first or second IP address to the entity, that the other IP address is not associated with the entity, and that the entity has a “bring your own device” policy that allows employees of the entity to access an entity network 516 with their own devices, e.g., the user device 506.

In some implementations, the analysis system 502 determines that the entity device 508 is a portable device, e.g., a laptop or a tablet, by identifying a first IP address associated with the cookies 512 that is also associated with an entity and a second IP address associated with the cookies 512 that is not associated with the entity. In some implementations, the analysis system 502 is unable to differentiate between a “bring your own device” such as the user device 506 and the entity device 508 when an operator of the entity device 508 may connect the entity device 508 to a network other than the entity network 516.

The analysis system 502 may use network policy information of an entity to determine a security rating for the entity. For example, the analysis system 502 may use a determination whether the entity has a “bring your own device” policy or allows employees to bring the entity device 508 home when calculating a security rating for the entity.

In some implementations, the analysis system 502 may determine whether the user device 506 or the entity device 508 are not fully secure, e.g., based on potentially malicious activities of the user device 506 or the entity device 508, and about which the operator of the device likely does not know. For example, the analysis system 502 may determine that the user device 506 was recently infected with malware and that the entity is not enforcing sufficient security policies on devices that can access the entity network 516, and assign the entity a lower security rating.

In some implementations, the analysis system 502 uses the logs 514 to determine whether an entity enforces the use of a virtual private network (VPN) on a device when the

device requests access to the entity's resources. For example, the analysis system 502 may determine whether the user device 506 and/or the entity device 508 have an always on or nearly always on VPN policy for access to the entity's resources and determine the entity's security rating accordingly. In some examples, when the analysis system 502 determines that the user device 506 or the entity device 508 have an always on or nearly always on VPN policy, the analysis system 502 assigns the entity a higher security rating than if the entity did not enforce the always on or nearly always on VPN policy.

In some implementations, the analysis system 502 receives information from a Domain Name Server 518 or a passive Domain Name Server that indicates whether a mail server that hosts an entity's electronic mail enforces one or more email validation methods. For example, the analysis system 502 may query the Domain Name Server 518 or a passive Domain Name Server to determine whether email sent from the mail server includes malicious mail, e.g., spam, whether an email with a sender address that includes a domain of the entity complies with a Sender Policy Framework 520, e.g., is sent from an authorized computer, and whether an email includes a signature that complies with DomainKeys Identified Mail 522.

The analysis system 502 may determine a security rating for an entity based on the validation methods used by the mail servers of the entity. For example, when the entity uses one or more non-duplicative validation methods, the entity may be assigned a higher security rating.

Figure 6 is an example of a user interface 600 for creating a backlog request that indicates an entity that requires a mapping of data to attributes of the entity. For example, an employee of an entity analysis company may enter an entity name 602, and a uniform resource locator 604 to request that an analysis system determine a mapping of data to attributes of the entity. The analysis system may use the mapped data when determining a security rating for the entity. The entity name 602 and uniform resource locator 604 may be a best guess by a requestor regarding the legal name of the entity and the domain name of the entity's website.

The user interface 600 includes a requested by field 606 and a priority field 608 that indicate a requested completion date and priority ranking, respectively. For example, a request system may automatically populate the requested by field 606, e.g., with a date a

predetermined time in the future, such as one month, and the priority field 608, e.g., with a medium priority. The requestor that is interacting with the user interface 600 may adjust either the requested by field 606 or the priority field 608 based on the requirements of the request. For example, a high priority backlog request with the same requested by date as a
5 medium or low priority backlog request would receive a higher priority, e.g., would be worked on first, compared to the medium or low priority backlog request.

A state field 610 may indicate the current state of the backlog request. For example, the state field 610 may indicate that the backlog request is currently being entered into the analysis system and has not been actively worked on, e.g., based on a “pending” state. A
10 “mapping in progress” state may indicate that an analysis system is mapping data to attributes for the entity with an automatic, semi-automatic, or manual mapping process.

A customer name field 612 may indicate the name of the customer that has requested a security rating of the entity. For example, the customer may be another entity or the entity analysis company, e.g., when the entity analysis company determines the security ratings of
15 one or more entities prior to a request from a customer.

A requestor field 614, an assigned to field 616, and an approver field 618 may be automatically populated by the request system. For example, the requestor field 614 may include the name or email address of the employee interacting with the user interface 600. The employee may adjust the information in the requestor field 614, for example, when the
20 employee is preparing the backlog request on behalf of another employee of the entity analysis company.

The user interface 600 includes a comments field 620 that allows the requestor to include one or more comments with a backlog request. For example, the requestor may include additional information about the entity in the comments field 620 and/or other
25 information associated with the backlog request.

Figure 7 is an example of a user interface 700 for viewing a list 702 of backlog requests. For example, an employee of the entity analysis company may interact with the user interface 700 to identify one or more backlog requests and the state of the backlog requests.

The list 702 of backlog requests may include information for each of the backlog requests, such as some of the information included in the user interface 600. In some
30

implementations, the list 702 includes a backlog initiation date that indicates the date a requestor created the backlog request. In some implementations, the list 702 includes a last updated date that indicates the most recent date for which the state of the backlog request changed. For example, the last updated date for a pending backlog request would be the date on which the backlog request was created. In some examples, when an analysis system begins to map data to attributes for an entity identified in a backlog request and the state of the backlog request changes from “pending” to “mapping in progress,” the last updated date would indicate the date the mapping process began.

The user interface 700 allows an employee of the entity analysis company to sort the list 702 of backlog requests, e.g., by a “state” or an “assigned to” field, to search for backlog requests associated with a particular search string, and to view all backlog requests according to a state filter 704, using an assigned to filter 706, or using an approver filter 708. For example, a first employee that maps data to the attributes of an entity may use the assigned to filter 706 to identify all of the backlog requests assigned to the first employee. In some examples, a second employee that approves the data mapping to the attributes of an entity after the mapping process is completed may use the approver filter 708 to identify all of the backlog requests that are waiting for approval and are assigned to the second employee.

The user interface 700 includes an add backlog option 710 that upon selection presents the user interface 600 and a clear filters option 712 that upon selection removes selection of all of the filters 704, 706, and 708, e.g., by setting the filters to the “all” selection, and that removes any filters associated with search strings.

An unapproved items option 714 upon selection allows the employee of the entity analysis company to view all backlog requests in the list 702 that have not been approved. In some implementations, selection of the unapproved items option 714 presents backlog requests that are not approved, are not duplicate requests, and are not unmappable in the list 702. For example, a backlog request that is unmappable may be a backlog request for an entity for which the analysis system does not have enough data to complete a map for the attributes of the entity. For example, the analysis system may have a predetermined threshold, e.g., a minimum requirement, for the quantity of attributes that require data for a backlog request to be mappable. In some examples, when the mapping process is semi-automatic or manual, a first person that is performing the mapping process, e.g., assigned to

the mapping process, or a second person that is performing the approval process may determine that there is insufficient data for an entity and indicate that the associated backlog request is unmappable.

Figure 8 is an example of a user interface 800 for updating a backlog for an entity.

5 For example, an employee of an entity analysis company may interact with the user interface 800 to map data to attributes of the entity, e.g., by selecting a start mapping option 802, to approve the map of data to attributes of the entity, e.g., by selecting a start approval option, and/or to view comments associated with the backlog.

10 For example, when a state 804 of the backlog request is “pending,” the top right portion of the user interface 800 includes the start mapping option 802 that upon selection presents a user with another user interface, e.g., a user interface 900 shown in Figure 9, that allows the user to map data to attributes of the entity associated with the backlog request.

15 After the user has begun the mapping process, the state 804 of the backlog request may change to “mapping in process” and the user interface elements in the user interface 800 may change. For example, the start mapping option 802 may change to a continue mapping option.

20 In some examples, once the mapping process has begun, the user interface 800 may include a finalize entity option and a reject backlog option. For example, user selection of the finalize entity option may move the backlog request toward the approval process, e.g., by changing the state 804 of the backlog request to “finalize entity.” In some examples, the finalize entity option may not be active until a predetermined threshold of attributes for the entity have been mapped to data.

25 In some implementations, once the mapping process has begun, the user interface 800 includes a reject backlog option. A user may select the reject backlog option to indicate that the analysis system has insufficient data for the mapping process or to otherwise indicate that the backlog request cannot be completed.

30 When the state 804 of the backlog request is “finalize entity,” the user interface 800 may include a submit for approval option instead of or in addition to the start mapping option 802 and the finalize entity option. Selection of the submit for approval option may change the state 804 of the backlog request to “waiting for approval” and indicate that the employee has completed the mapping process.

In some implementations, when the state of a backlog is “waiting for approval” and a second employee selects a backlog request, e.g., in the user interface 700, the user interface 800 includes a start approval option in the upper right corner, e.g., instead of the start mapping option 802. The analysis system may include user verification to ensure that only
 5 an authorized approver may select the start approval option, e.g., based on the credentials of the second employee and/or a verification that the second employee is the employee identified by the approver field.

Upon selection of the start approval option, the state of the backlog request may change to “approval in progress” and the user interface 800 may include a finish approval
 10 option and a reject option. Selection of the finish approval option may change the state of the backlog request to “approved,” indicating that the data mapped to the attributes of the entity is as accurate as possible and that the analysis system may use the mapped data to determine a security rating and a corresponding confidence level for the entity.

In some implementations, once a backlog request is approved, the backlog request is
 15 removed from the list 702 shown in Figure 7. For example, the list 702 may include only backlog requests that are active and does not include backlog requests that have been approved.

In some implementations, when the list 702 includes backlog requests that have been approved, an employee of the entity analysis company may select a completed backlog
 20 request to view the user interface 800. In these implementations, the user interface 800 shown in Figure 8 includes a needs maintenance option in the upper right, e.g., instead of the start mapping option 802. Select of the needs maintenance option indicates that there may be new data available that can be mapped to attributes of the entity for which the backlog request was made or a decision was otherwise made to verify that the data mapped to the
 25 attributes of the entity is current.

In some implementations, the analysis system automatically identifies backlog requests that need maintenance. For example, the analysis system may perform maintenance on backlog requests according to a schedule, e.g., weekly, monthly, quarterly, semi-annually, annually, etc. The schedule may be particular to a specific backlog request, e.g., for the
 30 “Sample Entity,” or for a group of backlog requests, e.g., that were all approved during a predetermined period of time, such as a particular week or month.

In some examples, the analysis system automatically determines that data is available for an updated mapping. For example, the analysis system may determine that particular data is available, e.g., based on a news article, and that the mapping of data to attributes of the entity should be updated. In some examples, the analysis system may determine that a
5 predetermined threshold quantity of new data for the entity has been identified and that the mapping should be updated. The analysis system may use any appropriate algorithm to determine that the mapping for an entity should be updated.

Upon selection of the needs maintenance option or a determination by the analysis system that a backlog request requires maintenance, the state 804 of the backlog request may
10 change to “pending” or “waiting for maintenance.” For example, when the state changes to “pending,” the backlog request may be processed in a manner similar to the initial processing of the backlog request.

In some examples, when the state of the backlog request changes to “waiting for maintenance” and the user interface 800 is presented to a user, the user interface 800 includes
15 a start maintenance option, e.g., instead of the start mapping option 802. The indication that the backlog request is “waiting for maintenance” may assist a user in determining that some data was previously mapped to the attributes of the entity.

The analysis system may identify the data and/or entity attributes that have potentially changed when the employee works on the maintenance process. In some examples, the
20 employee verifies that all of the data mapped to the attributes of the entity is current and has not changed since the previous mapping process.

Once the maintenance process is complete, the state 804 of the backlog request may change to “waiting for approval” and the analysis system may proceed through an approval process similar to the initial approval of a backlog request.

25 The user interface 800 includes a start time 806 and an end time 808. For example, the start time 806 indicates the time that the mapping process began and the end time 808 indicates when the backlog request was approved.

In some implementations, the list 702 shown in Figure 7 does not include a list of backlog requests that have been completed and the analysis system automatically identifies
30 entities which require an update to the mapping between data and attributes for the entity. For example, once a backlog request is approved, the backlog request is removed from the

list 702. In these implementations, the analysis system determines when the mapping for an entity should be updated based on new data for the entity and/or a schedule.

Figure 9 is an example of a user interface 900 for mapping data to attributes of an entity. For example, an employee of an entity analysis company may interact with the user interface 900 during a mapping process, either the initial mapping process or a maintenance mapping process, and/or during an approval process.

The user interface 900 includes an entity name field 902 and a primary domain field 904. The entity name field 902 may represent the legal name of the entity the employee is mapping. For example, the employee may enter the name of the entity as included in corporate filings in the entity name field 902.

In some examples, the primary domain field 904 includes the uniform resource locator from the original backlog request, e.g., the uniform resource locator 604 shown in Figure 6. In some examples, the employee interacting with the user interface 900 selects another domain as the primary domain for the primary domain field 904. For example, the employee may determine that the entity has multiple domains, potentially associated with different products or services offered by the entity, and select the primary domain from the multiple domains for the entity.

The primary domain field 904 may include a selectable link for the primary domain. For example, the employee may view a webpage for the primary domain in a web page frame 906 or select the selectable link in the primary domain field 904 to open a new window with the webpage for the primary domain. The employee may view the webpage for the primary domain or another domain of the entity to identify data for the mapping of data to attributes of the entity.

For example, the employee may view webpages of the primary domain to determine one or more industries in which the entity offers products and/or services and enter the industries in an industry field 908. For example, the employee may select a search option to view a list of industries and select the determined industries for the entity in the list. The selection of the industries in the list may auto-populate the industry field 908 with the one or more selected industries.

The user interface 900 includes a logo field 910 for the entity. For example, the employee may enter a uniform resource address that identifies a location of the entity's logo,

e.g., on the primary domain. In some examples, the employee may store a copy of the logo in a database and enter a link to the location of the logo in the database in the logo field 910.

In some implementations, the user interface 900 presents a copy of the logo. For example, the user interface 900 may include a logo display field below the logo field 910 where the logo display field presents the copy of the logo.

The employee may view information from the primary domain or other resources to determine a description for an entity description field 912. The entity description field 912 may include a general summary of the products and/or services offered by the entity, when the entity was founded, major subsidiaries of the entity, and/or competitors of the entity, to name a few examples.

In some implementations, the user interface 900 includes a customer visible selection 914. The customer visible selection 914 indicates whether a customer of the entity analysis company may view information included in the user interface 900 about the entity. For example, when the customer visible selection 914 is selected, the customer may view at least a portion of the data included in the user interface 900, such as the entity name, the primary domain, the entity industries, the logo, and the entity description.

The user interface 900 includes sections for technical data about the entity, such as a virtual Autonomous System numbers section 916 and a mail server configuration section 918, and non-technical data, such as an entity employee counts section 920.

The virtual Autonomous System numbers section 916 allows an employee of the entity analysis company to map one or more Autonomous System numbers to the entity, e.g., to an Autonomous System numbers attribute of the entity. For example, the analysis system may automatically identify one or more Autonomous System numbers assigned to the entity or the user of the user interface 900 may manually enter one or more Autonomous Systems numbers in the virtual Autonomous System numbers section 916. In some examples, the employee may create a new record in the virtual Autonomous System numbers section 916, indicate the registrar that provided the Autonomous System numbers, e.g., a Regional Internet Registry, and the type of data entry, e.g., manual in this example.

The employee may select an edit option 922 for the new record to populate additional information for the record. For example, selection of the edit option 922 may present a user interface 1100 shown in Figure 11.

The mail server configuration section 918 may be populated automatically or manually with data received from a Domain Name Server, a passive Domain Name Server, or a mail server, as described in more detail above. For example, the analysis system may identify a mail server for the entity, whether the mail server uses one or more validation methods, such as Sender Policy Framework or DomainKeys Identified Mail, and a risk level associated with the mail server based on the validation methods used by the mail server.

The entity employee counts section 920 allows the employee of the entity analysis company to enter information about the number of employees who work for the entity. For example, the employee may enter the total number of employees of the entity and/or the number of employees that work for a separate division or group within the entity, such as information technology, human resources, marketing, research and development, hardware, software, small business, or home users, e.g., as separate records in the entity employee counts section 920.

When a user is approving a backlog request, e.g., during the “approval in progress” state, the user may review the data mapped to the attributes of the entity and approve or reject the mapped data. For example, the approver may verify the accuracy of the data in the virtual Autonomous System numbers section 916, the mail server configuration section 918, and the entity employee counts section 920 and indicate approval of the data with selection of one or more approved selections 924a-c. In some examples, each entry in the sections includes a separate approved selection that the user may select to approve the backlog request.

Upon selection of all the approved selections 924a-c, the user may select a main approved selection 926 and then save the backlog request to enable the finish approval option in the user interface 800, discussed in more detail above. For example, the main approved selection 926 may not be enabled until the user has approved all of the separate approved selections 924a-c in the user interface 900.

In some implementations, one or more of the approved selections 924a-c may not be enabled until the user approves one or more portions of data associated with a record. For example, the approver may need to view and approve data in the user interface 1100, shown in Figure 11, prior to approving the record in the virtual Autonomous System numbers section 916.

In some implementations, one or more portions of the approval process may be automated. For example, the analysis system may perform an automatic approval process for the entity employee counts section 920 and/or other data mapped to the attributes of the entity.

5 Figure 10 is an example of a user interface 1000 for viewing data for an entity. For example, when the analysis system includes data for a quantity of entities that have a name similar to the entity name in the entity name field 902, the user interface 1000 may present a list of results that include information for the entities that have the similar names.

10 The user interface 1000 includes a first entity name 1002 and details for the first entity name 1002, such as a first primary domain 1004 for the first entity, a first industry 1006, and a first entity description 1008, to name a few examples. The user interface also includes a second entity name 1010 and associated details for the second entity name 1010, such as a second primary domain 1012, a second industry 1014 for the second entity, and a second entity description 1016.

15 The user may select one of the entities from the user interface 1000 based on the details associated with the entity and enter the details in the user interface 900. For example, the user may determine that the second primary domain 1012 matches the primary domain in the primary domain field 904 and that the second entity name 1010 is for the current backlog request. The user may then enter the details in the user interface 900 manually or select an
20 option to have the details data automatically entered into the user interface 900.

 Figure 11 is an example of a user interface 1100 for changing a virtual Autonomous System number in the data mapping for an entity. For example, a user may interact with the user interface 1100 to add, edit, or remove one or more Classless Inter-Domain Routing entries for an entity mapping.

25 The user interface 1100 includes a Classless Inter-Domain Routing (CIDR) section 1102 for a user to add one or more CIDR records to a virtual Autonomous System number for an entity. For example, the user may enter data into a new CIDR record 1104 and select an add new CIDR option 1106 and the analysis system will add a new CIDR record to a list of records in the CIDR section 1102.

30 Each CIDR record 1108a-b includes an Internet Protocol address, a source, such as one of the Regional Internet Registries, a first registered date, a last updated date, and a

comment. For example, a user may view data for the entity, e.g., in another window, and manually create the CIDR record 1108a indicating that the source of the record is the American Registry for Internet Numbers (ARIN) based on the source of the viewed data.

In some examples, the user may select one of Regional Internet Registry options 1110a-b to automatically add one of the CIDR records 1108a-b to the user interface 1100. For example, the user may select an ARIN option 1110a or a Réseaux IP Européens Network Coordination Centre (RIPE) option 1110b to automatically receive data for one of the CIDR records 1108a-b as described in more detail with reference to a user interface 1200 shown in Figure 12.

During the approval process, a user of the user interface 1100 may select one or more approved selections after verifying the accuracy of the data entered in the user interface 1100. For example, the user may review the CIDR records 1108a-b and select the approved selection 1112 to approve the CIDR records 1108a-b. In some examples, the user may individually select an approved selection for each of the CIDR records 1108a-b instead of the approved selection 1112.

In some implementations, during the approval process, the user may select an approve all option 1114 or an un-approve all option 1116 after reviewing one or more of the CIDR records 1108a-b. For example, the user may determine that all of the CIDR records 1108a-b are accurate and select the approve all option 1114.

Selection of the approve all option 1114 presents information in the user interface 1100 indicating that the CIDR records 1108a-b are approved. For example, upon selection of the approve all option 1114, the approved selection for each of the CIDR records 1108a-b and the approved selection 1112 may include a check mark.

In some implementations, after each of the CIDR records 1108a-b are approved, a main approved selection 1118 is enabled, allowing the user to finalize the approval of the virtual Autonomous System number entry. The use of multiple approval options may ensure that a user does not approve a record in the CIDR section 1102 unintentionally.

Figure 12 is an example of a user interface 1200 for automatically retrieving Classless Inter-Domain Routing data from a Regional Internet Registry or an Internet Assigned Numbers Authority. For example, the user interface 1200 receives a search string in a search field 1202, and the analysis system provides the search string to one or more Regional

Internet Registries and presents received search results in a general results section 1204 of the user interface 1200.

A user may select one or more of the results presented in the general results section 1204 using one or more general selection options 1206a-c and select a fetch detailed results option 1208. Upon selection of the fetch detailed results option 1208, the analysis system retrieves details for the selected results, e.g., from memory of the analysis system or one or more of the Regional Internet Registries.

The user interface 1200 presents the detailed results in a detailed results section 1210 and includes information such as an address, a quantity of networks, and a quantity of points of contact. The user may request addition information for one of the records in the detailed results section 1210 and view the additional information for the record in a network section 1212 and a point of contact section 1214. In some implementations, the user interface 1200 presents the results of the search string query in the detailed results section 1210 instead of the general results section 1204.

The user may select one or more of the records in the detailed results section 1210 using detailed selection options 1216a-b and map the selected detailed results to an entity by selecting a save selected CIDRs option 1218. For example, selection of the save selected CIDRs option 1218 may create the CIDR record 1108b in the user interface 1100 shown in Figure 11.

In some implementations, the user interface 1200 receives data from a single Regional Internet Registry. For example, the user interface 1200 may be associated with a single predetermined Regional Internet Registry. In some examples, the user interface 1200 may include a Regional Internet Registry selection that allows a user to select the Regional Internet Registry that receives the search string the user enters in the search field 1202. In some implementations, the user interface 1200 presents results for multiple different Regional Internet Registries.

In some implementations, one or more of the detailed results may not include data for all of the fields in the network section 1212 and/or the point of contact section 1214. For example, a first Regional Internet Registry may include data for all of the fields in the network section 1212 and the point of contact section 1214 and a second Regional Internet Registry may include data for some of the fields in the network section 1212.

Figure 13 is a block diagram of an example database schema 1300 of entity attribute data. When a user creates a backlog request for an entity, a backlog object 1302 is created in a database and a record for the backlog object 1302 is created in an entity management log 1304. For example, the entity management log 1304 includes a record of all activities associated with the creation of a backlog object 1302 and the mapping of data to entity attributes.

The database schema 1300 includes an entity object 1306 that includes one or more attributes of the entity. For example, the entity object 1306 includes the entity name, the primary domain of the entity, and a unique identifier for the entity. In some examples, when a backlog object 1302 is created for an entity, an entity object 1306 is also created for the entity.

When a user maps data to the attributes of the entity, an employee count object 1308, one or more industry objects 1310, and a logo object 1312 may be created. For example, the employee count object 1308 may include fields for the total number of employees that work for the entity, a last updated date, and an approved Boolean value.

In some examples, the industry object 1310 may include the name of an industry associated with an entity, a last updated date, and an approved Boolean value. In some implementations, an entity object 1306 may be associated with multiple industry objects, for example, when an entity provides multiple different products or services. In some implementations, multiple entity objects 1306 may be associated with the same industry object 1310. For example, when multiple entities are competitors, the entity objects 1306 for the competitors may be associated with the same industry object 1310.

The logo object 1312 may include a uniform resource locator that identifies a location of the entity's logo and properties of the logo. For example, the logo object 1312 may include a height, a width, and a mime type for the logo.

An entity object 1306 may be associated with one or more mail server configuration objects 1314. For example, each of the mail server configuration objects 1314 may include data representing attributes of a mail server used by the entity. The mail server may be hosted by the entity or by a third party, e.g., as part of a cloud service. The mail server configuration object 1314 may include fields for one or more validation methods used by the mail server, such as Sender Policy Framework and DomainKeys Identified Mail. In some

examples, the mail server configuration object 1314 includes data representing a risk level of the mail server.

One or more Autonomous System number objects 1316 may be associated with the entity object 1306. For example, a user may associate an Autonomous System number object 1316 with the entity object 1306 by interacting with the user interface 900. The Autonomous System number object 1316 may include a name for the Autonomous System number and a registrar, such as one of the Regional Internet Registries.

Each of the Autonomous System number objects 1316 may be associated with one or more Classless Inter-Domain Routing (CIDR) objects 1318. For example, the CIDR object 1318 may include a block of Internet Protocol addresses that are assigned to the entity. In some examples, the CIDR object 1318 includes a source field, e.g., to identify a Regional Internet Registry, a handle, e.g., used by the Regional Internet Registry, and/or a comment, e.g., received from the Regional Internet Registry or a user who created the CIDR object 1318.

In some implementations, the Autonomous System number object 1316 may be associated with one or more auto fetch CIDR objects 1320. For example, when a user manually enters CIDR data, e.g., when the user manually creates the new CIDR record 1104 shown in Figure 11, the analysis system may create a CIDR object 1318, and when the analysis system provides the user with CIDR data, e.g., using the user interface 1200, or automatically creates a new CIDR record, the analysis system may create an auto fetch CIDR object 1320.

The auto fetch CIDR object 1320 may include a block of Internet Protocol addresses assigned to the entity, a source field, a handle, and one or more comments. For example, the comments may be comments received from the Regional Internet Registry, e.g., identified by the source field, or the user who interacted with the user interface 1200.

Each of the auto fetch CIDR objects 1320 is associated with an Internet registry object 1322. For example, the Internet registry object 1322 includes the name, handle, and address of the Regional Internet Registry identified in the source field of the auto fetch CIDR object 1320. In some examples, multiple different auto fetch CIDR objects 1320 may be associated with the same Internet registry object 1322, e.g., when each of the multiple different auto fetch CIDR objects 1320 have the same source.

The Internet registry object 1322 is associated with one or more Internet registry point of contact objects 1324. For example, each of the Internet registry point of contact objects 1324 includes a name for the point of contact, a description of the point of contact, e.g., the title of the point of contact, and contact information for the point of contact. The contact information may include the name of the company that employs the point of contact, the company's address, and a phone number and email address for the point of contact.

In some implementations, the database schema 1300 includes an imported data object 1326. For example, the imported data object 1326 may include data received from third parties, and/or data retrieved by the analysis system, e.g., from the data sources described with reference to Figure 3. The data sources may include sources of financial data, statistics about the entity, information about the assets of the entity, trace data, and corporate tree information, e.g., subsidiary and/or parent entities, to name a few examples.

The imported data object 1326 may be associated with an import settings object 1328 that includes settings associated with the imported data. For example, when the imported data is received from a third party, the import settings object 1328 may include credentials that allow the entity analysis company and the analysis system to access data from the third party. When the imported data includes data retrieved by the analysis system, the import settings object 1328 may include data indicating the frequency of data retrieval, the types of data retrieved by analysis system, and/or credentials for the analysis system to access data, to name a few examples.

In some implementations, at least some of the objects in the database schema 1300 include an approved Boolean value. For example, the value may indicate whether or not the data in the associated object has been approved.

In some implementations, when the approved Boolean value for an object is true and one of the fields for the object is changed, the approved Boolean value is automatically set as false. For example, the analysis system may automatically set the approved Boolean value for an industry as false when the associated industry name is changed.

In some implementations, all of the objects in the database schema 1300 include a last updated date.

In some implementations, one or more of the objects in the database schema 1300 include a start date and an end date. For example, the use of the start date and the end data

may allow representation of changes over time in the data mapped to an entity. For example, the entity object 1306 may have a first employee count object 1308, with a start date of “2011-01-01” and an end date of “2011-07-01” with an employee count value of ten, and a second employee count object 1308, with a start date of “2011-07-02,” an end date of “2012-01-15,” and an employee count value of twenty. In some examples, the industry object 1310, the logo 1312, the mail server configuration object 1314, the Autonomous System number object 1316, the Classless Inter-Domain Routing objects 1318, and the auto fetch CIDR 1320 include a start date and an end date.

In some implementations, when data is initially associated with an attribute of an entity the end date is set to a future date, e.g., two hundred years from the current date. When updated data is associated with the attribute, e.g., an employee count of twenty, the end date of the original object is updated and a new object is created for the updated data. For example, the analysis system may create the first employee count object with a start date of “2011-01-01,” an end date of “3011-01-01,” and an employee count value of ten. When the analysis system determines that the employee count for the entity is twenty, through either an automatic, semi-automatic, or manual process, the analysis system updates the end date of the first employee count object, e.g., to “2011-07-01,” and creates the second employee count object with the updated data, such as an employee count of twenty, a start date of “2011-07-02,” and an end date of “3011-07-02.”

In some implementations, the start dates and end dates of similar objects for the same entity may overlap. For example, the end date of the first employee count object and the start date of the second employee count object may be the same date, e.g., “2011-07-01.” In some examples, the end date of a first Classless Inter-Domain Routing object may be “2013-05-12,” e.g., where the start date is “2012-01-01,” and the start date of a second Classless Inter-Domain Routing object may be “2013-02-27,” where both objects are associated with the same entity.

The use of the start date and the end date may allow the analysis system to record data history for an entity and use the data history when determining a security rating for the entity.

In some implementations, some of the objects in the database schema 1300 include automated maintenance data. For example, the automated maintenance data may include one

or more criteria that, when satisfied, indicate that the corresponding object should be updated or a new object of the same type should be created. For example, the maintenance criteria for an auto fetch CIDR object 1320 obtained from a Regional Internet Registry may be a date and/or a time, such as a last updated date, a start date, or a maintenance data that indicates when maintenance should be performed. The analysis system uses the maintenance criteria to determine when to periodically query the Regional Internet Registry to determine whether a unique handle or a range of Internet Protocol address for the auto fetch CIDR object 1320 have changed, and update the auto fetch CIDR object 1302 or create a new object accordingly.

Figure 14 is a flow diagram of a process 1400 for inferring a security state of an entity. For example, the process 1400 can be carried out by the analysis system 302 from the environment 300 shown in Figure 3.

Traces of activities of an online user who is associated with an entity are received (1402). For example, the analysis system may receive data that indirectly represent the activities of the online user. In some examples, the traces represent user interaction with a social media network, entity email communications, and/or content presented to the user, e.g., as indicated by cookies stored on a device operated by the user.

In some implementations, the traces of the activities maintain the privacy of the online user. For example, data may indicate that the online user made a post to a social media network but not include the content of the post.

In some implementations, the traces include tracking of an identity of the online user between two of the different contexts. For example, the traces may represent activity of the user at different times or on different devices. In some examples, the analysis system performs the tracking based on cookies associated with advertising directed to the user. For example, the analysis system may receive cookie tracking information from a third party and use the cookie tracking information to identify the different contexts of the identity of the online user.

In some implementations, the traces include indications of security checks made with respect to communications associated with the user. For example, the security checks may include indications of whether email messages conform to DomainKeys Identified Mail standards or email domains conform to Sender Policy Framework. In some examples, the

security checks include a determination of whether a mail server that provides electronic mail to the online user employs one or more validation methods.

A security state of the entity is inferred by analysis of the traces (1404). For example, the analysis system may determine whether the traces indicate that an account of the user
 5 may have been compromised, whether the entity allows employee devices to access confidential data, or security policies used by a mail server that provides electronic mail communications for the entity.

In some implementations, the traces indicate successful attacks on computer systems of the entity. For example, the traces may indicate that a social media account of the online
 10 user was compromised. In some examples, the traces may indicate that the online user is receiving malicious mail and that a domain identified as the origin of some of the malicious mail may have been compromised.

In some implementations, the analysis includes a comparison of traces that originated in different contexts of the user's online activities. For example, the comparison may be
 15 between traces associated with different times of online user activity where the different contexts include different times.

In some examples, the comparison is between traces where traces that originated at one of the times reflect a user deletion relative to the traces that originated at an earlier time. For example, a first set of traces may identify a post made by the online user and a second set
 20 of traces may indicate that the post was later deleted by the online user. The analysis system may determine, for example, that the traces that originated at one of the times reflect a user deletion of malicious data or code relative to the traces at the earlier time.

In some implementations, the different contexts include a context the security of which is controlled by the entity and a context the security of which is at least partly
 25 uncontrolled by the entity. For example, the controlled context may include a computer system or device made accessible by the entity to the user, e.g., an entity device, and the partly uncontrolled context may include a computer system or device owned by the user, e.g., a user device. The analysis system may determine that the entity device and the user device are operated by the same online user, for example, based on tracking information, such as
 30 cookies, stored on both devices. In some examples, the analysis system may determine that the security of the user device is not optimal, infer that the online user may take security risks

when operating the entity device, and that the security state of the entity is lower than if the online user did not take security risks.

In some examples, the controlled context and the partly uncontrolled context may include the same computer system or device. For example, the analysis system may identify an entity device or a user device that connects to an entity network and another network different than the entity network. The analysis system may identify the controlled context when the device connects to the entity network and the partly uncontrolled context when the device connects to the other network. In some examples, the analysis system identifies the controlled context and the partly uncontrolled context with cookie tracking data for a cookie stored on the computer system or device.

In some implementations, the process 1400 can include additional steps, fewer steps, or some of the steps can be divided into multiple steps. For example, the analysis system may distinguish between traces that represent a less satisfactory security state of the entity and traces that represent a more satisfactory security state of the entity. In some examples, the analysis system distinguishes the traces prior to inferring the security state of the entity.

Figure 15 is a flow diagram of a process 1500 for enabling a user to assist in the generation of an entity map. For example, the process 1500 can be carried out by the analysis system 302 from the environment 300 shown in Figure 3.

A map is generated between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets, at least part of the generating of the map being done automatically (1502). For example, the analysis system may determine one or more Internet Protocol addresses assigned to an entity and map the Internet Protocol addresses to a Classless Inter-Domain Routing section attribute of the entity.

In some implementations, the technical assets include network-related information. For example, the network-related information may include at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server configurations, domain names, social media handles, third-party data hosting, internet service providers, Domain Name System (DNS) services, Autonomous System numbers, and Border Gateway Protocol (BGP) advertisements.

In some implementations, the generation of the map includes online discovery of information about the technical assets. For example, the analysis system may query Domain Name Servers, one or more Regional Internet Registries, or an Internet Assigned Numbers Authority to determine some of the technical assets for the entity. In some examples, the information about the technical assets is discovered through passive DNS queries.

In some implementations, the analysis system may identify from the passive DNS queries associations between domain names and network addresses. For example, the analysis system may perform the process 1600, described below with reference to Figure 16, to determine associations between domain names and network addresses. In some examples, the network addresses include Internet Protocol addresses. In some implementations, an association between a domain name and a network address includes a network address that is assigned to a domain name. In some examples, an association between a domain name and a network address includes a domain name that maps to the network address.

A user is enabled to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities (1504). For example, the analysis system presents a user interface to the user to allow the user to map data representing technical assets of an entity to attributes of the entity. In some examples, the tool enables the user to assign a technical asset to an entity.

The order of steps in the process 1500 described above is illustrative only, and enabling the user to assist in the generation of the entity map can be performed in different orders. For example, the analysis system may enable the user may to assist in the generation of the map prior to the generation of the map. In some examples, the analysis system may generate the map while enabling the user to assist in the generation of the map.

In some implementations, the process 1500 can include additional steps, fewer steps, or some of the steps can be divided into multiple steps. For example, the analysis system may present to the user non-technical-asset information through the user interface. In some implementations, the non-technical-asset information includes information about the entities. In some examples, the non-technical-asset information about the entities includes at least one of descriptions of entities, industry classifications, and employee counts.

In some implementations, the process 1500 invokes external crowd-sourced services to aid in generating the map. For example, the analysis system may provide a portion of data for the technical assets to a crowd-sourced service and receive a map of the provided data to one or more of the entities. In some examples, the analysis system provides the portion of
5 data to the crowd-sourced services such that each person who participates in the crowd-sourced service is able to view only a portion of the data associated with an entity.

In some implementations, the process 1500 enables a separate review and approval of entities proposed to be included in the map. For example, the analysis system may require a first user to map data to attributes of an entity, and a second user to review and approve the
10 data map.

In some implementations, the process 1500 provides the map to an application for joining to event data or scoring the security state of the entities. For example, the analysis system may receive the map and determine a security rating and corresponding confidence score for an entity where the map includes data for the entity. In some examples, when the
15 map includes a portion of the data for an entity, e.g., received from a crowd-sourced service or from different data sources, the analysis system receives the map and joins the map with data from the different data sources.

In some implementations, the process 1500 generates graphs of relationships among entities based on their associations with technical assets. For example, the analysis system
20 may generate a graph that shows a relationship between two entities that use the same cloud service or web host. The analysis system may use the relationships among entities to determine security ratings for the different entities. For example, if a first entity's data that is hosted by the cloud service is compromised, then the security score of a second entity that uses the same cloud service may be lower than if the first entity's data was not compromised.

In some implementations, the process 1500 tracks changes over time in the network addresses that are associated with a given domain name. For example, the analysis system
25 identifies changes in the network addresses that are associated with the given domain name and determines a security rating for the entity based on the changes.

In some implementations, the generation of the map that is done automatically
30 includes at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map. For

example, the analysis system may automatically approve one or more portions of the map that a user manually generates.

In some examples, the analysis system may automatically retrieve data from one or more data sources and/or automatically associate retrieved data with an entity. For example, the analysis system may identify a range of Internet Protocol addresses assigned to the entity and map the identified Internet Protocol addresses to a Classless Inter-Domain Routing section attribute of the entity.

Figure 16 is a flow diagram of a process 1600 for mapping Internet Protocol addresses to an entity. For example, the process 1600 can be carried out by the analysis system 302 from the environment 300 shown in Figure 3.

A first domain name for an entity is received (1602). For example, the analysis system receives the first domain name from a user interface. The entity may be one of multiple entities. For example, the analysis system may perform the process 1600 for each entity in the multiple entities.

A first passive DNS query is sent to identify first name servers for the first domain name (1604). For example, the analysis system provides the first passive DNS query to a DNS server.

A list of the first name servers for the first domain is received (1606). For example, the DNS server determines the list of first name servers for the first domain and provides the list of first name servers for the first domain to the analysis system.

A second passive DNS query is sent, for each of the first name servers, to identify second domain names for which the name server is authoritative (1608). For example, the analysis system sends the second passive DNS queries to the DNS server.

A list is received, for each of the first name servers, of the second domain names for which the name server is authoritative (1610). For example, for each of the second passive DNS queries, the DNS server determines the list of second domain names for which the name server for the first domain is also authoritative.

A third passive DNS query is sent, for each of the second domain names, to identify host names for the hosts of the second domain name and Internet Protocol addresses for the host names (1612). For example, the analysis system sends the third passive DNS queries to the DNS server.

A list of the host names and the Internet Protocol addresses for the host names is received (1614). For example, for each of the third passive DNS queries, the DNS server identifies the host names for the second domain names and the Internet Protocol addresses assigned to the host names. In some implementations, the list of host names includes the names of the first name servers.

Each of the Internet Protocol addresses is mapped to an attribute for the entity (1616). For example, the analysis system automatically maps the Internet Protocol addresses to Classless Inter-Domain Routing block for the entity.

Figure 17 is a block diagram of an example computer system 1700. For example, referring to Figure 3, the analysis system 302 or a server forming a portion of the analysis system 302 could be an example of the system 1700 described here, as could a computer system used by any of the users who access resources of the environment 100, the environment 200, the environment 300, the environment 400, or the environment 500. The system 1700 includes a processor 1710, a memory 1720, a storage device 1730, and an input/output device 1740. Each of the components 1710, 1720, 1730, and 1740 can be interconnected, for example, using a system bus 1750. The processor 1710 is capable of processing instructions for execution within the system 1700. In some implementations, the processor 1710 is a single-threaded processor. In some implementations, the processor 1710 is a multi-threaded processor. In some implementations, the processor 1710 is a quantum computer. The processor 1710 is capable of processing instructions stored in the memory 1720 or on the storage device 1730. The processor 1710 may execute operations such as the steps described above in reference to the process 1400 (Figure 14), the process 1500 (Figure 15), or the process 1600 (Figure 16).

The memory 1720 stores information within the system 1700. In some implementations, the memory 1720 is a computer-readable medium. In some implementations, the memory 1720 is a volatile memory unit. In some implementations, the memory 1720 is a non-volatile memory unit.

The storage device 1730 is capable of providing mass storage for the system 1700. In some implementations, the storage device 1730 is a computer-readable medium. In various different implementations, the storage device 1730 can include, for example, a hard disk device, an optical disk device, a solid-state drive, a flash drive, magnetic tape, or some other

large capacity storage device. In some implementations, the storage device 1730 may be a cloud storage device, e.g., a logical storage device including multiple physical storage devices distributed on a network and accessed using a network. In some examples, the storage device may store long-term data, such as the log 412 in the database 410 (Figure 4), as well as the entity names 112 in the database 110 (Figure 1). The input/output device 1740 provides input/output operations for the system 1700. In some implementations, the input/output device 1740 can include one or more of a network interface devices, e.g., an Ethernet card, a serial communication device, e.g., an RS-232 port, and/or a wireless interface device, e.g., an 802.11 card, a 3G wireless modem, a 4G wireless modem, etc. A network interface device allows the system 1700 to communicate, for example, transmit and receive data such as data from the data sources 104 shown in Figure 1. In some implementations, the input/output device can include driver devices configured to receive input data and send output data to other input/output devices, e.g., keyboard, printer and display devices 1760. In some implementations, mobile computing devices, mobile communication devices, and other devices can be used.

A server (e.g., a server forming a portion of the analysis system 302 shown in Figure 3) can be realized by instructions that upon execution cause one or more processing devices to carry out the processes and functions described above, for example, storing the entity names 112 in the database 110 and assigning the entity names 112 corresponding security ratings 114 and confidence scores 116 (Figure 1). Such instructions can include, for example, interpreted instructions such as script instructions, or executable code, or other instructions stored in a computer readable medium. A server can be distributively implemented over a network, such as a server farm, or a set of widely distributed servers or can be implemented in a single virtual device that includes multiple distributed devices that operate in coordination with one another. For example, one of the devices can control the other devices, or the devices may operate under a set of coordinated rules or protocols, or the devices may be coordinated in another fashion. The coordinated operation of the multiple distributed devices presents the appearance of operating as a single device.

Although an example processing system has been described in Figure 17, implementations of the subject matter and the functional operations described above can be implemented in other types of digital electronic circuitry, or in computer software, firmware,

or hardware, including the structures disclosed in this specification and their structural equivalents, or in combinations of one or more of them. Implementations of the subject matter described in this specification, such as software for mapping data to entities and assigning security ratings and confidence scores to entities (Figures 1-5), can be implemented as one or more computer program products, i.e., one or more modules of computer program instructions encoded on a tangible program carrier, for example a computer-readable medium, for execution by, or to control the operation of, a processing system. The computer readable medium can be a machine readable storage device, a machine readable storage substrate, a memory device, a composition of matter effecting a machine readable propagated signal, or a combination of one or more of them.

The term “system” may encompass all apparatus, devices, and machines for processing data, including by way of example a programmable processor, a computer, or multiple processors or computers. A processing system can include, in addition to hardware, code that creates an execution environment for the computer program in question, e.g., code that constitutes processor firmware, a protocol stack, a database management system, an operating system, or a combination of one or more of them.

A computer program (also known as a program, software, software application, script, executable logic, or code) can be written in any form of programming language, including compiled or interpreted languages, or declarative or procedural languages, and it can be deployed in any form, including as a standalone program or as a module, component, subroutine, or other unit suitable for use in a computing environment. A computer program does not necessarily correspond to a file in a file system. A program can be stored in a portion of a file that holds other programs or data (e.g., one or more scripts stored in a markup language document), in a single file dedicated to the program in question, or in multiple coordinated files (e.g., files that store one or more modules, sub programs, or portions of code). A computer program can be deployed to be executed on one computer or on multiple computers that are located at one site or distributed across multiple sites and interconnected by a communication network.

Computer readable media suitable for storing computer program instructions and data include all forms of non-volatile or volatile memory, media and memory devices, including by way of example semiconductor memory devices, e.g., EPROM, EEPROM, and flash

memory devices; magnetic disks, e.g., internal hard disks or removable disks or magnetic tapes; magneto optical disks; and CD-ROM and DVD-ROM disks. The processor and the memory can be supplemented by, or incorporated in, special purpose logic circuitry. Sometimes a server (e.g., forming a portion of the analysis system 302) is a general purpose computer, and sometimes it is a custom-tailored special purpose electronic device, and sometimes it is a combination of these things.

Implementations can include a back end component, e.g., a data server, or a middleware component, e.g., an application server, or a front end component, e.g., a client computer having a graphical user interface or a Web browser through which a user can interact with an implementation of the subject matter described in this specification, or any combination of one or more such back end, middleware, or front end components. The components of the system can be interconnected by any form or medium of digital data communication, e.g., a communication network. Examples of communication networks include a local area network ("LAN") and a wide area network ("WAN"), e.g., the Internet.

Certain features that are described above in the context of separate implementations can also be implemented in combination in a single implementation. Conversely, features that are described in the context of a single implementation can be implemented in multiple implementations separately or in any sub-combinations.

The order in which operations are performed as described above can be altered. In certain circumstances, multitasking and parallel processing may be advantageous. The separation of system components in the implementations described above should not be understood as requiring such separation.

Other implementations are within the scope of the following claims.

For example, although we have described examples in which the information received and analyzed by the system is used for determining security characteristics of an entity, the results of the analysis provide useful information about the entity that could be used for a variety of other purposes and in other ways.

CLAIMS

1. A method comprising:
 - receiving traces of activities of an online user who is associated with an entity; and
 - inferring by analysis of the traces a security state of the entity.
2. The method of claim 1 in which the traces indicate successful attacks on computer systems of the entity.
3. The method of claim 1 comprising distinguishing between traces that represent a less satisfactory security state of the entity and traces that represent a more satisfactory security state of the entity.
4. The method of claim 1 in which the analysis comprises a comparison of traces that originated in different contexts of the user's online activities.
5. The method of claim 4 in which the different contexts comprise different times.
6. The method of claim 5 in which the traces that originated at one of the times reflect a user deletion relative to the traces that originated at an earlier time.
7. The method of claim 6 in which the traces that originated at one of the times reflect a user deletion of malicious data or code relative to the traces at the earlier time.
8. The method of claim 4 in which the different contexts comprise a context the security of which is controlled by the entity and a context the security of which is at least partly uncontrolled by the entity.
9. The method of claim 8 in which the controlled context comprises a computer system or device made accessible by the entity to the user, and the partly uncontrolled context comprises a computer system or device owned by the user.
10. The method of claim 4 in which the traces comprise tracking of an identity of the online user between two of the different contexts.

11. The method of claim 10 in which the tracking comprises cookies associated with advertising directed to the online user.

12. The method of claim 1 in which the traces comprise indications of security checks made with respect to communications associated with the user.

13. The method of claim 12 in which the security checks comprise indications of whether email messages conform to DomainKeys Identified Mail standards or email domains conform to Sender Policy Framework.

14. A method comprising:

generating a map between (a) technical assets that contribute to security characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets, at least part of the generating of the map being done automatically; and

enabling a user to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities.

15. The method of claim 14 in which the technical assets comprise network-related information.

16. The method of claim 15 in which the network-related information comprises at least one of Internet Protocol addresses, blocks of Internet Protocol addresses, mail server configurations, domain names, social media handles, third-party data hosting, internet service providers, Domain Name System services, Autonomous System numbers, and Border Gateway Protocol advertisements.

17. The method of claim 15 in which generating the map comprises online discovery of information about the technical assets.

18. The method of claim 17 in which the information about the technical assets is discovered from an Internet Assigned Numbers Authority or a Regional Internet Registry.

19. The method of claim 17 in which the information about the technical assets is discovered through passive DNS queries.

20. The method of claim 19 comprising identifying from the passive DNS queries associations between domain names and network addresses.

21. The method of claim 20 comprising tracking changes over time in the network addresses that are associated with a given domain name.

22. The method of claim 20 in which identifying from the passive DNS queries associations between domain names and network addresses comprises:

- receiving a first domain name for an entity from the entities;
- sending a first passive DNS query to identify first name servers for the first domain name;
- receiving a list of the first name servers for the first domain;
- sending a second passive DNS query, for each of the first name servers, to identify second domain names for which the name server is authoritative;
- receiving a list, for each of the first name servers, of the second domain names for which the name server is authoritative;
- sending a third passive DNS query, for each of the second domain names, to identify host names for the hosts of the second domain name and Internet Protocol addresses for the host names;
- receiving a list of the host names and the Internet Protocol addresses for the host names; and
- mapping each of the Internet Protocol addresses to an attribute for the entity.

23. The method of claim 14 comprising presenting to the user non-technical-asset information through the user interface.

24. The method of claim 23 in which the non-technical-asset information comprises information about the entities.

25. The method of claim 24 in which the information about the entities comprises at least one of descriptions of entities, industry classifications, and employee counts.
26. The method of claim 14 in which the tool enables the user to assign a technical asset to an entity.
27. The method of claim 14 comprising invoking external crowd-sourced services to aid in generating the map.
28. The method of claim 14 comprising enabling a separate review and approval of entities proposed to be included in the map.
29. The method of claim 14 comprising providing the map to an application for joining to event data or scoring the security state of the entities.
30. The method of claim 14 in which the part of the generating of the map that is done automatically comprises at least one of collecting information about technical assets and about entities, associating technical assets with entities, and approving proposed portions of the map.
31. The method of claim 14 comprising generating graphs of relationships among entities based on their associations with technical assets.

ABSTRACT

Among other things, traces are received of activities of an online user who is associated with an entity. By analysis of the traces a security state of the entity is inferred.

Also, a map is generated between (a) technical assets that contribute to security

5 characteristics of respective entities and (b) the identities of the entities that are associated with the respective technical assets. At least part of the generating of the map is done automatically. A user can be engaged to assist in the generating of the map by presenting to the user through a user interface (a) data about the technical assets of entities and (b) an interactive tool for associating the technical assets with the identities of the entities.

40935536.doc



1/16

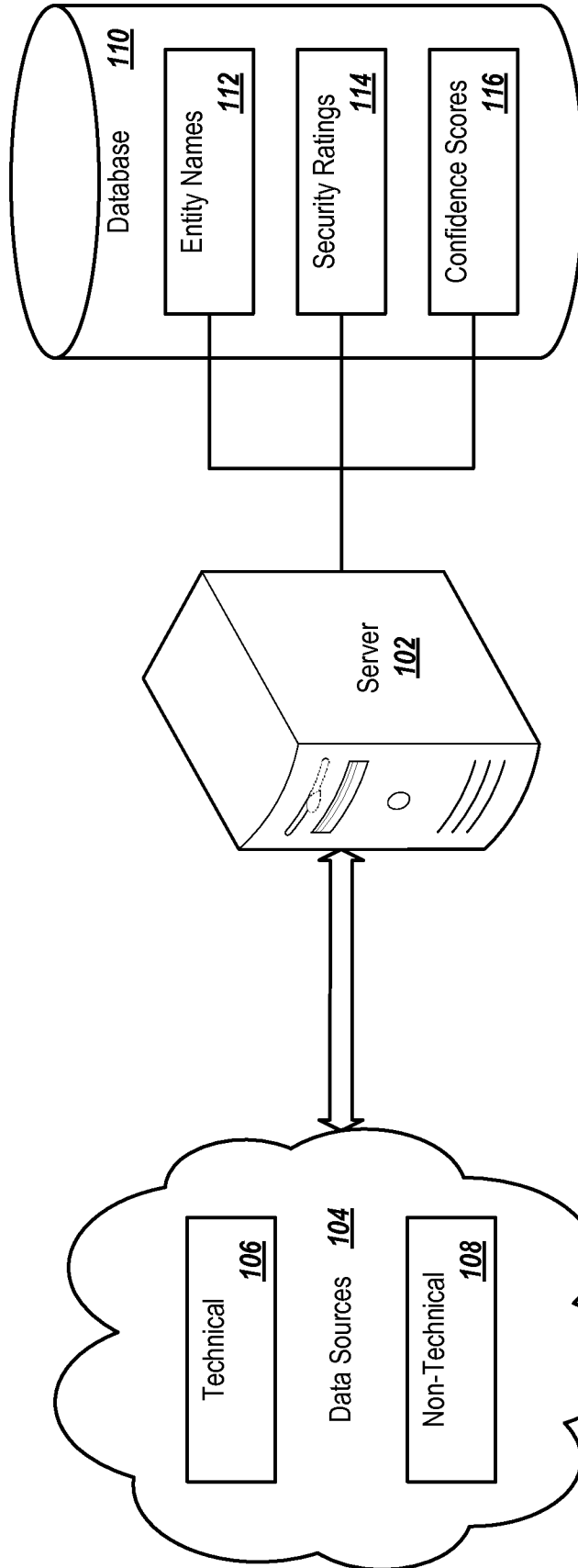


FIG. 1

100 ↗



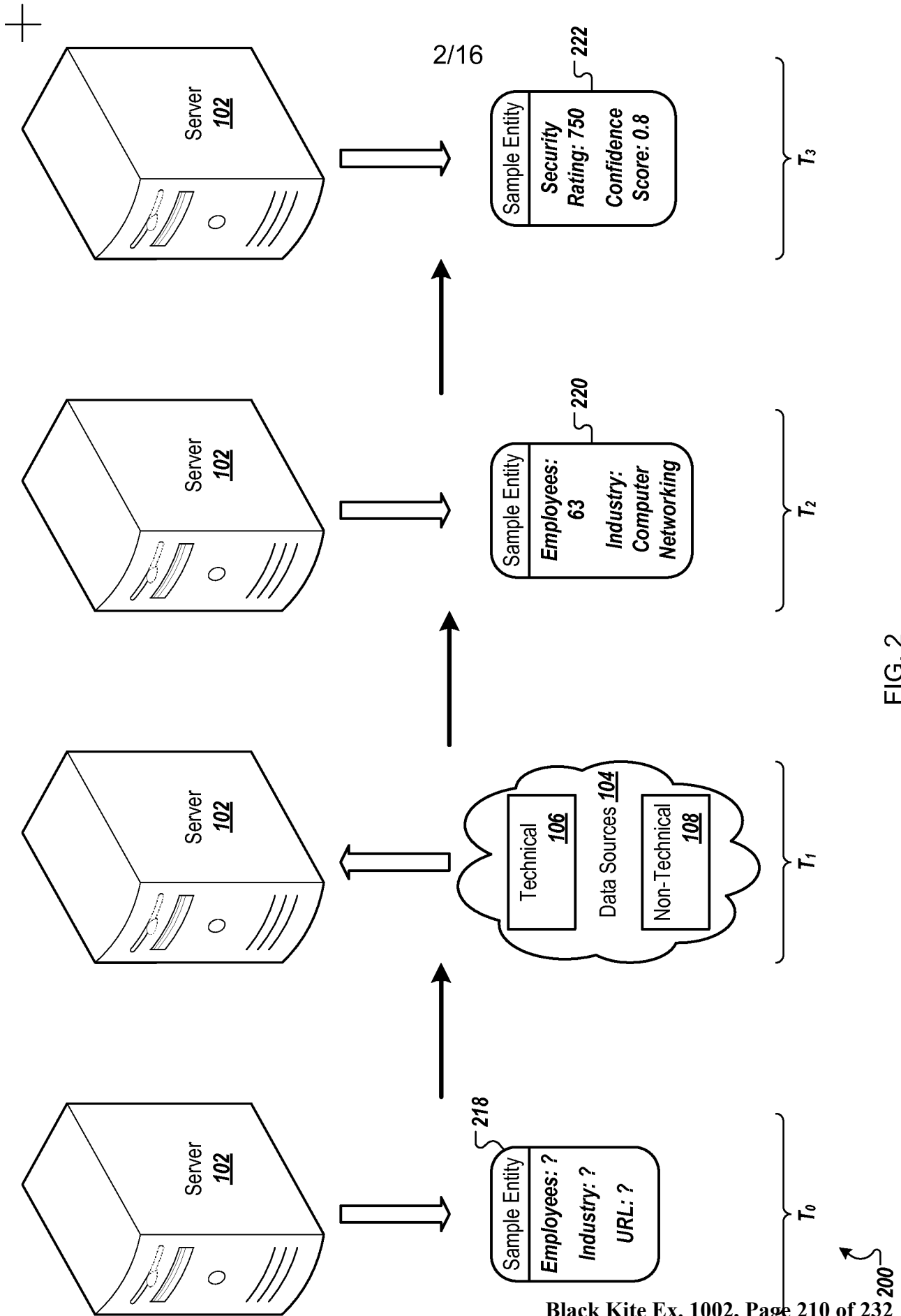


FIG. 2

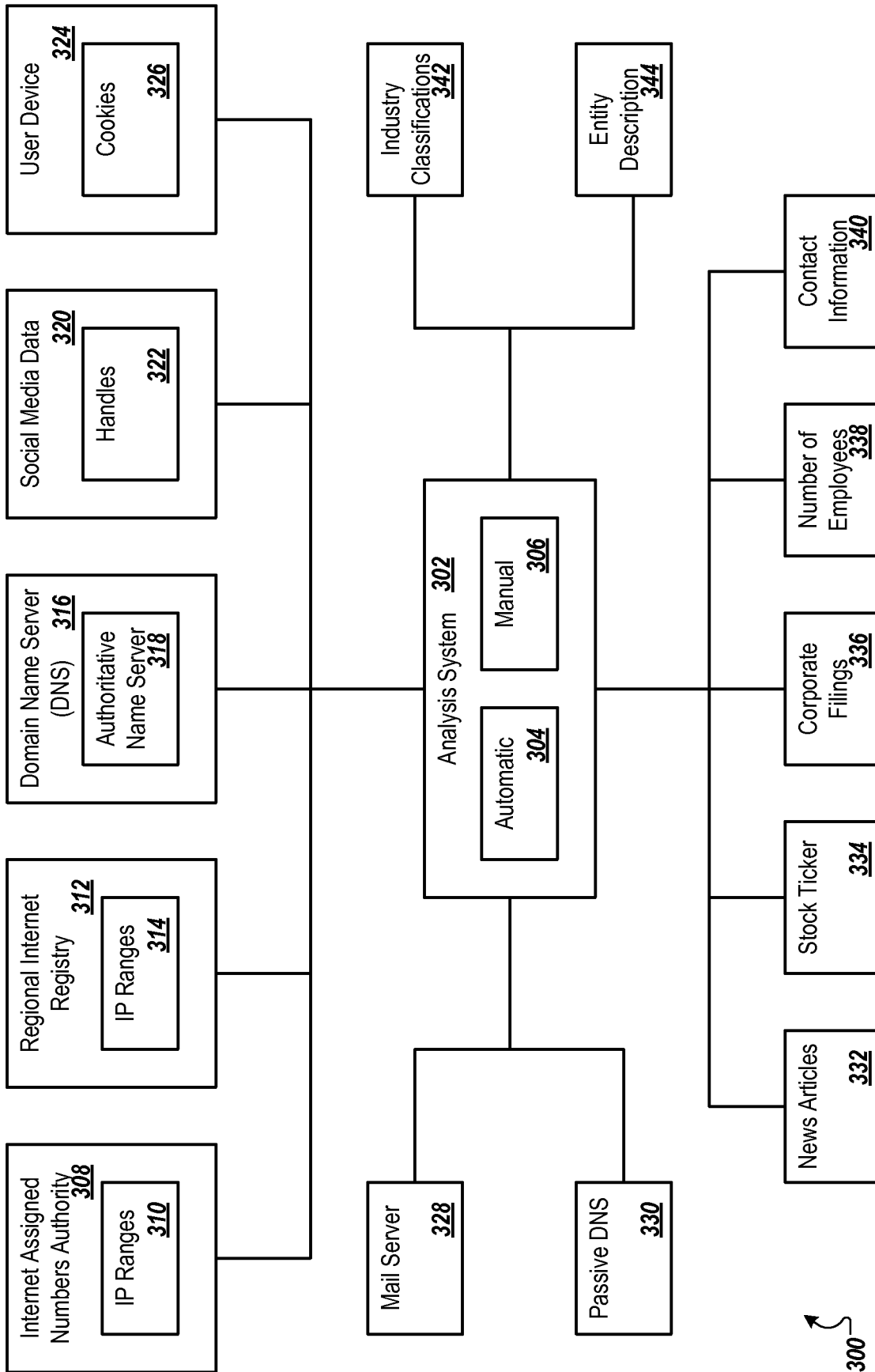


FIG. 3

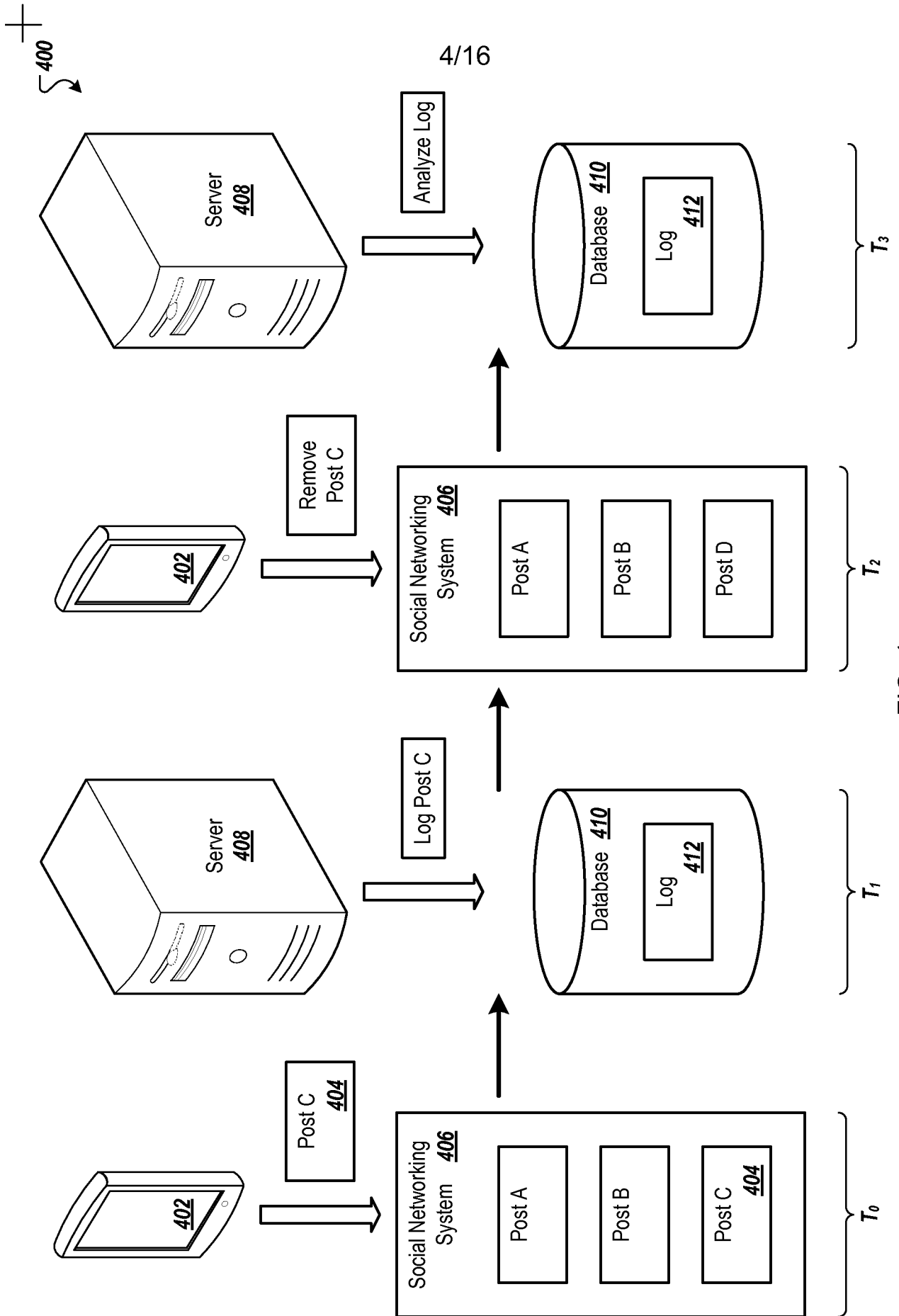


FIG. 4

5/16

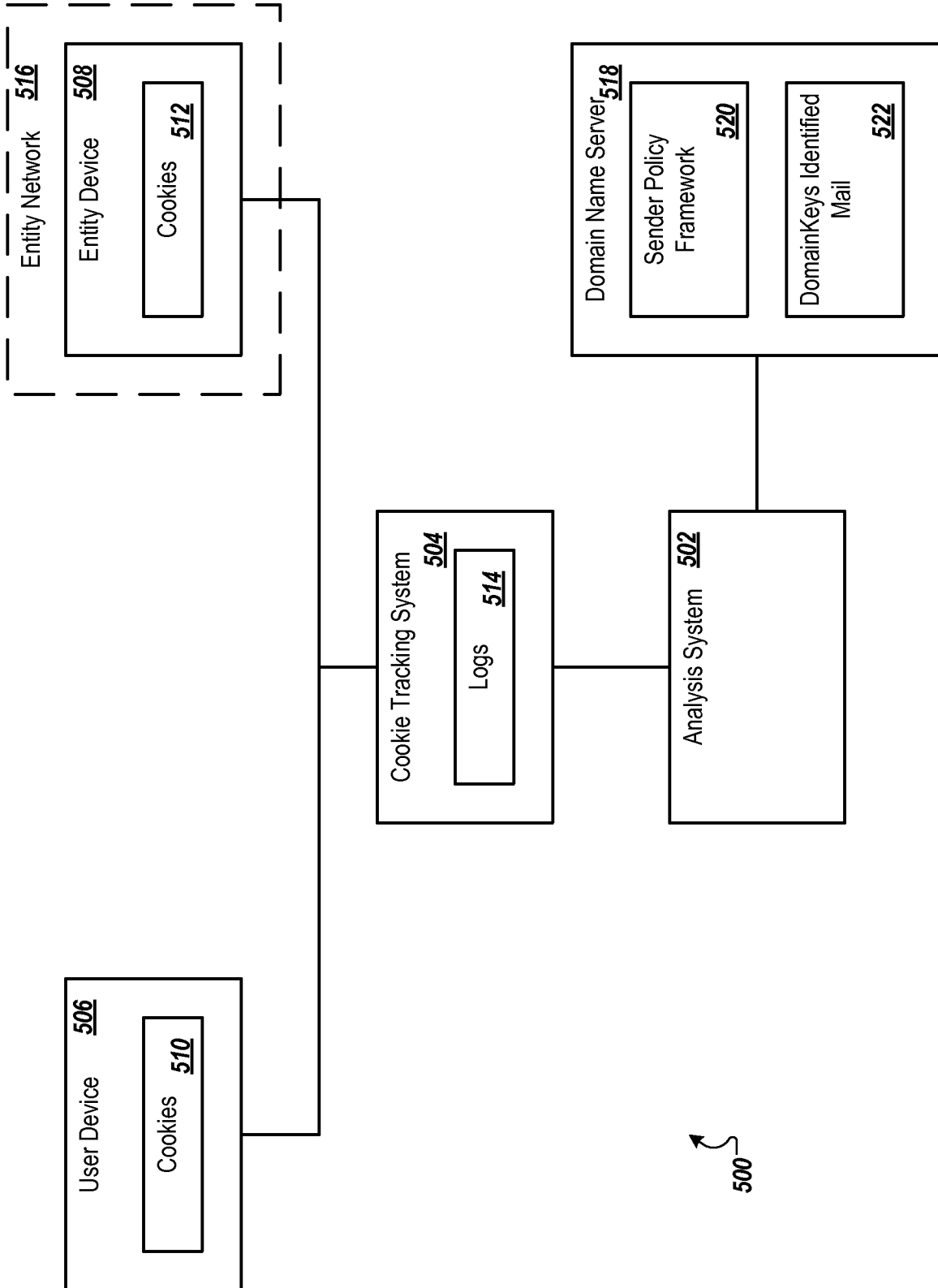


FIG. 5

6/16

Add backlog	
Entity Name:	Sample Entity <u>602</u>
URL:	www.sample.com <u>604</u>
Requested By:	2013/09/17 Today  <u>606</u>
Priority:	High  <u>608</u>
State:	Pending <u>610</u>
Customer Name:	Customer A <u>612</u>
Requestor:	requestor <u>614</u>
Assigned To:	mapper1@test.com <u>616</u>
Approver:	approver <u>618</u>
Comments:	<u>620</u>
Save and add another Save and continue editing Save	

FIG. 6

Select backlog to change

Search

Unapproved items 714

Clear Filters 712

Add backlog 710 +

By state All Pending Mapping in Progress Waiting for Maintenance Waiting for Approval Finalize Entity Approval in Progress Approved Rejected by Entity Mapper Duplicate Unmappable 704						
By assigned to All mapper1@test.com mapper2@test.com mapper3@abc.com approver requestor 706						
By approver All approver approverB 708						

Entity Name

URL

Requested By

Priority

State

Customer Name

Requestor

Assigned To

Approver

Sample Entity	www.sample...	2013/09/17	High	Pending	Customer A	requestor	mapper1@...	approver
Entity Two	www.two.com	2013/11/22	Low	Mapp...	Customer C	requestor	mapper2@...	approverB
Entity C	www.ec.com	2013/09/23	Medium	Waitin...	Customer J	requestor	mapper1@...	approverB
ABC	www.abc.com	2014/05/25	Low	Pending	Customer A	requestor	mapper1@...	approver

702

700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

FIG. 7

8/16

Change backlog

History

Entity

Start Mapping **802**

Entity Name: Sample Entity

URL: www.sample.com

Requested By: September 17, 2013

Priority: High

State: Pending ↪ **804**

Customer Name: Customer A

Requestor: requestor

Assigned To: mapper1@test.com

Start Time: September 3, 2013, 1:03 pm ↪ **806**

End Time: (None) ↪ **808**

Approver: approver

Comments:

Save and add another

Save and continue editing

Save

800 ↪

FIG. 8

9/16

Change Entity

History

Refresh Domain Page

CIDRs

Backlog

Entity Name:

Sample Entity

902

Primary Domain:

www.sample.com

904

Industry:

Computer Networking

908

Logo:

http://www.sample.com/home/logo.png

910

Entity Description:

A description of the entity can be retrieved from the web or created by a user

912

☒ Customer Visible

☐ History Permanent

☐ Approved

914

926

Unique Identifier: 50138016-600d-4b85-9cd7-4914149a2a2d

Virtual Autonomous System Numbers

916

924a

Name	AS Number	Registrar	Type	Start Date	End Date	Approved	As only entity unmappable	Modify
Sample AS		ARIN	Manual	2011/01/01	9999/01/01	☐	☐	Edit 922

Mail Server Configurations

918

924b

SPF	DKIM	Risk Level	First Registered	Last Updated	Start Date	End Date	Approved

Entity Employee Counts

920

924c

Size	Start Date	End Date	Approved

By clicking the "Refresh Domain Page" button at top, you can view the entity web page in this frame. In some rare case that the entity page cannot be shown here, please click the link next to the primary domain to load it in a separate window.

906

Save and continue editing

Save

FIG. 9

10/16

Change Entity		Data Available		Backlog		CDDs		Default Domain Data		History	
Entity Name:		Sample Entity		902		Sample Entity Office Supplies		1002			
Primary Domain:		www.sample.com		904		Primary Domain:		null		1004	
Industry:		Computer Networking		908		Industry:		Office Supplies		1006	
Logo:		http://www.sample.com/home/logo.png				Entity Description:		A manufacturer of office products such as business machines, furniture ...		1008	
Entity Description:		A description of the entity can be retrieved from the web or created by a user		912		# Employees:		127			
☒ Customer Visible		914				Stock ticker:		null			
☐ History Permanent						Ownership type:		Private			
☐ Approved		926				Entity type:		Subsidiary			
Unique Identifier:		50138016-600d-4b85-9cd7-4914149a2a2d				Ultimate parent		Entity Parent			
Virtual Autonomous System Numbers		916				Logo		null			
Name		AS Number		Registrar		Type		Start Date		End Date	
Sample AS				ARIN		Manual		2011/01/01		9999/01	
Mail Server Configs		918				Risk Level		First Register			
SPF											
Entity Employee Counts		920				Ownership type:		Private			
Size				Start Date		Entity type:		Subsidiary			
						Ultimate parent		Entity Parent			
										1000	

FIG. 10

11/16

Change Virtual Autonomous System Number

HistoryEntityBacklog

ARIN 1110aRIPE 1110b

Entity Name:
AS Name:
AS Number:
Registrar:
Type:
Start Date:
End Date:
☐ Approved
☐ As only entity unmappable

Sample Entity
Sample AS

ARINManual

2011/01/01Today
9999/01/01Today

1118

Classless Inter-Domain Routing (CIDR) 1102

Show 10 entries

Approve all 1114Unapprove all 1116Search

Action

Net_CIDR

Source

Handle

First reg...

Last updated

Comment

Add 1106

New CIDR

1104

1112

ID

Net_CIDR

Source

Handle

First reg...

Last updated

Comment

Approved

Modify

Delete

94080 1108a

192.1.168.1.2

ARIN

sam...

2011/01/01

2011/01/01

This is another CIDR

☐

Edit

Del

94079 1108b

192.1.168.1.1

ARIN

sam...

2011/01/01

2011/01/01

This is a sample CIDR.

☐

Edit

Del

Save and add another

Save and continue editing

Save

FIG. 11

12/16

Auto-Fetching (Entity: Sample Entity)

Search WhoisRWS

sample

1202

Search

Customers

Organizations

Search

Handle

Organization

Freesamples.com

Sample Entity

Great Samples

1206a

1206b

1206c

1204

Fetch

1208

Network

1212

Handle

IP Range

Registration Date

Last Updated

ARIN comment

Mapper comment

Select?

Status

NET-199-250...

199.250.133.0-1 ...

2012/07/27

2012/07/27

Yes

Point of Contact

1214

Description

Name

Company

Address

Last Updated

Email

Phone

Comment

Admin

Contact A

Sample Entity

1455 Pennsylvania...

2012/07/27

contact.a@sample...

1-800-726-7532

Customers

Organizations

Search

Handle

Address

Organization

Freesamples.com

Sample Entity

1216a

1216b

1210

Save Selected CIDRs

1218

Clear

1210

Search

Comments

POCs

Networks

1

2

None

1

2

1235 Howard Street...

1455 Pennsylvania A...

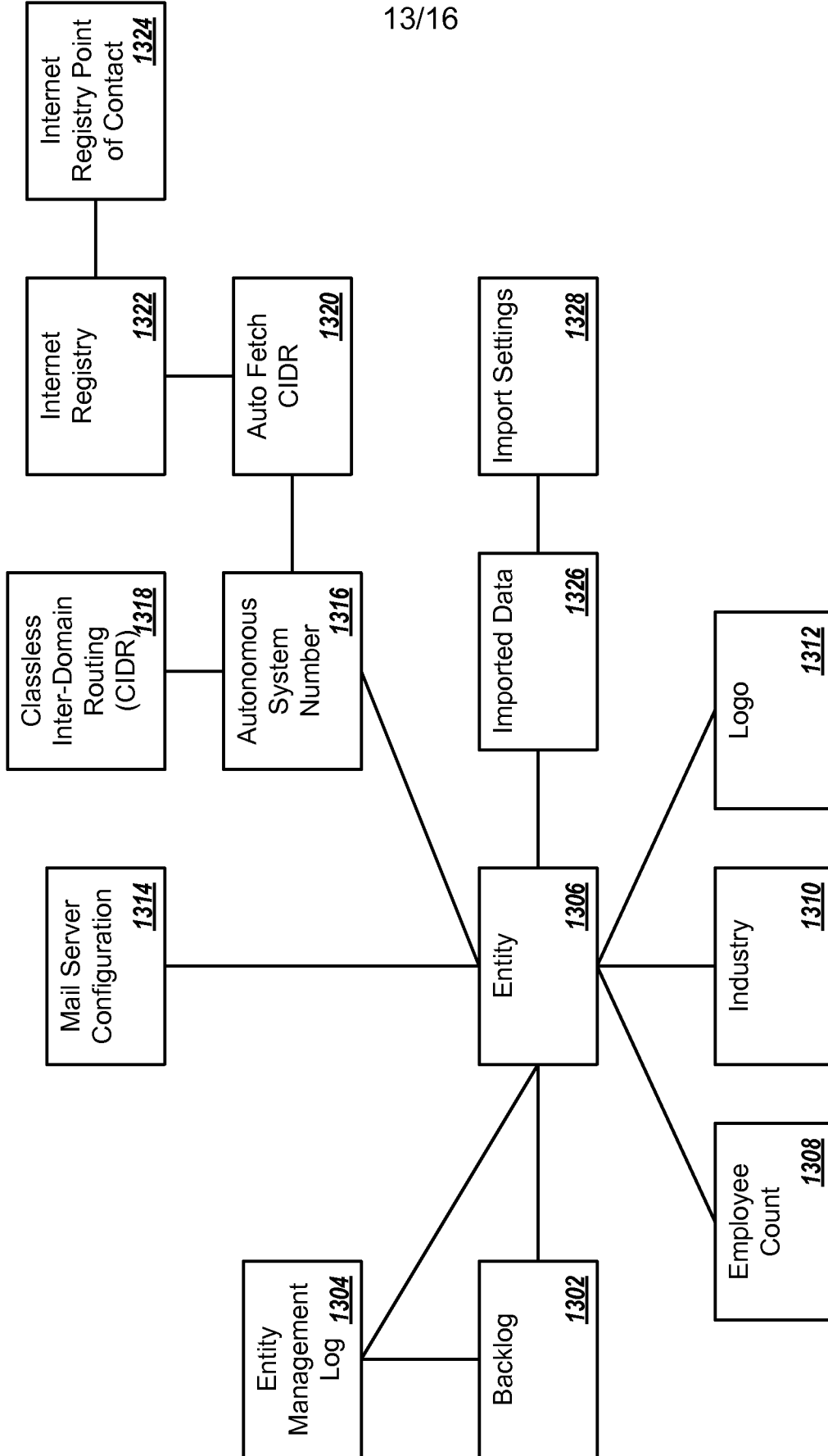
1

2

FIG. 12

Black Kite Ex. 1002, Page 220 of 232

1300 ↗



13/16

FIG. 13

+

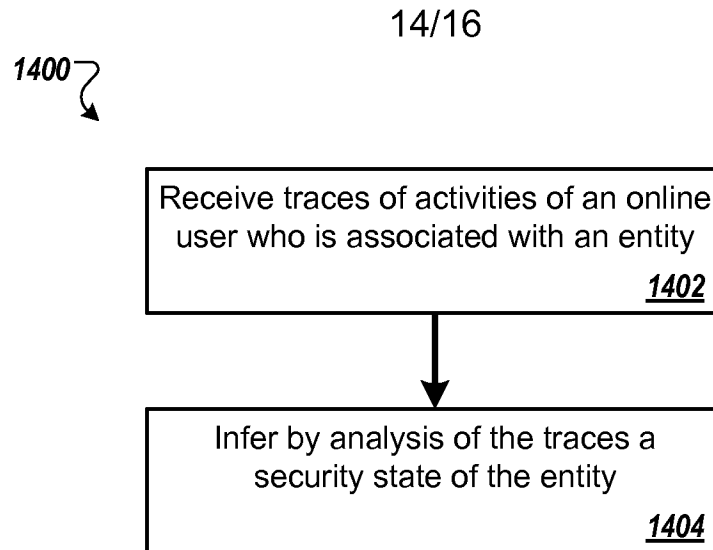


FIG. 14

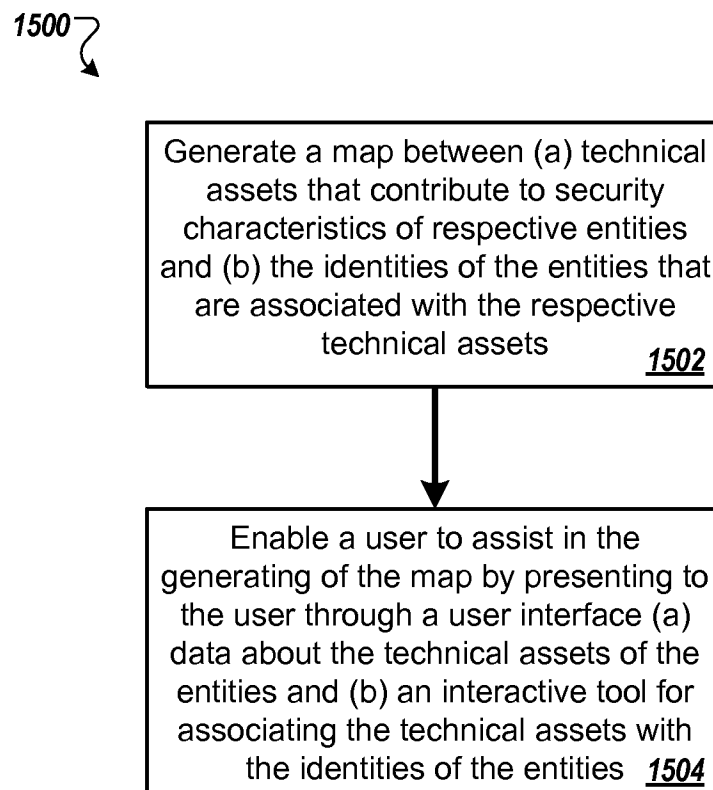


FIG. 15

+

+

1600 ↘

15/16

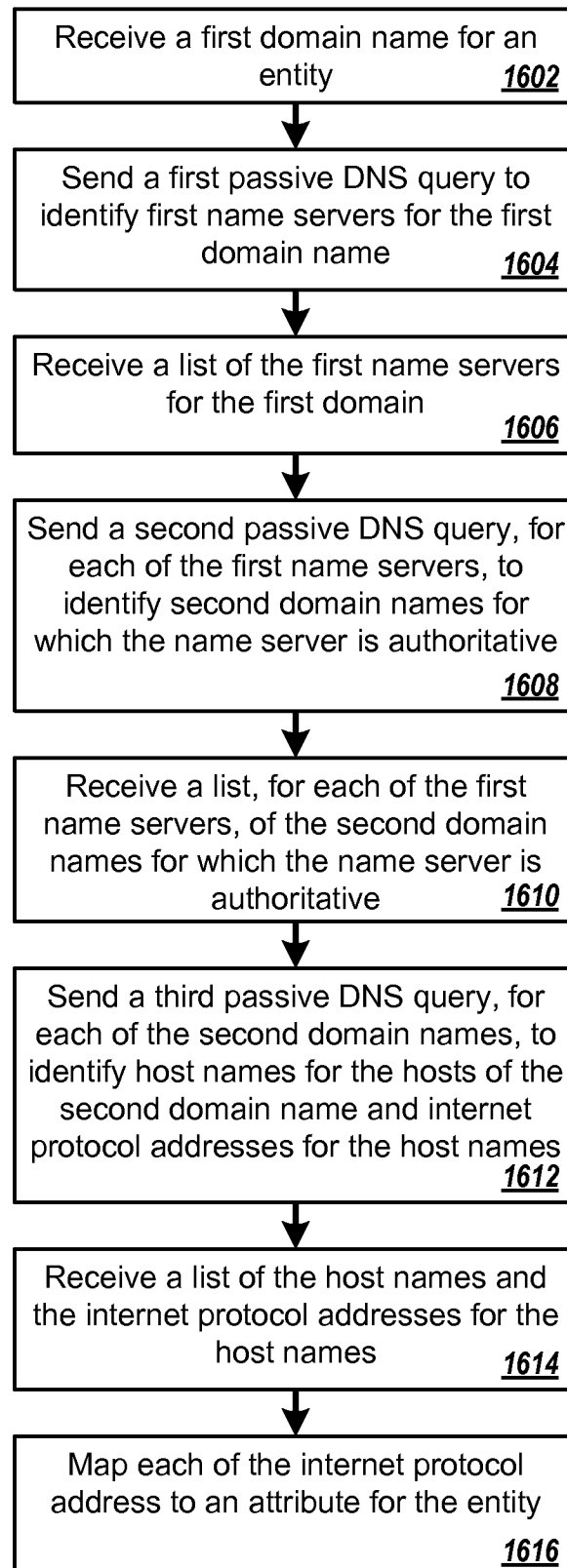


FIG. 16

+

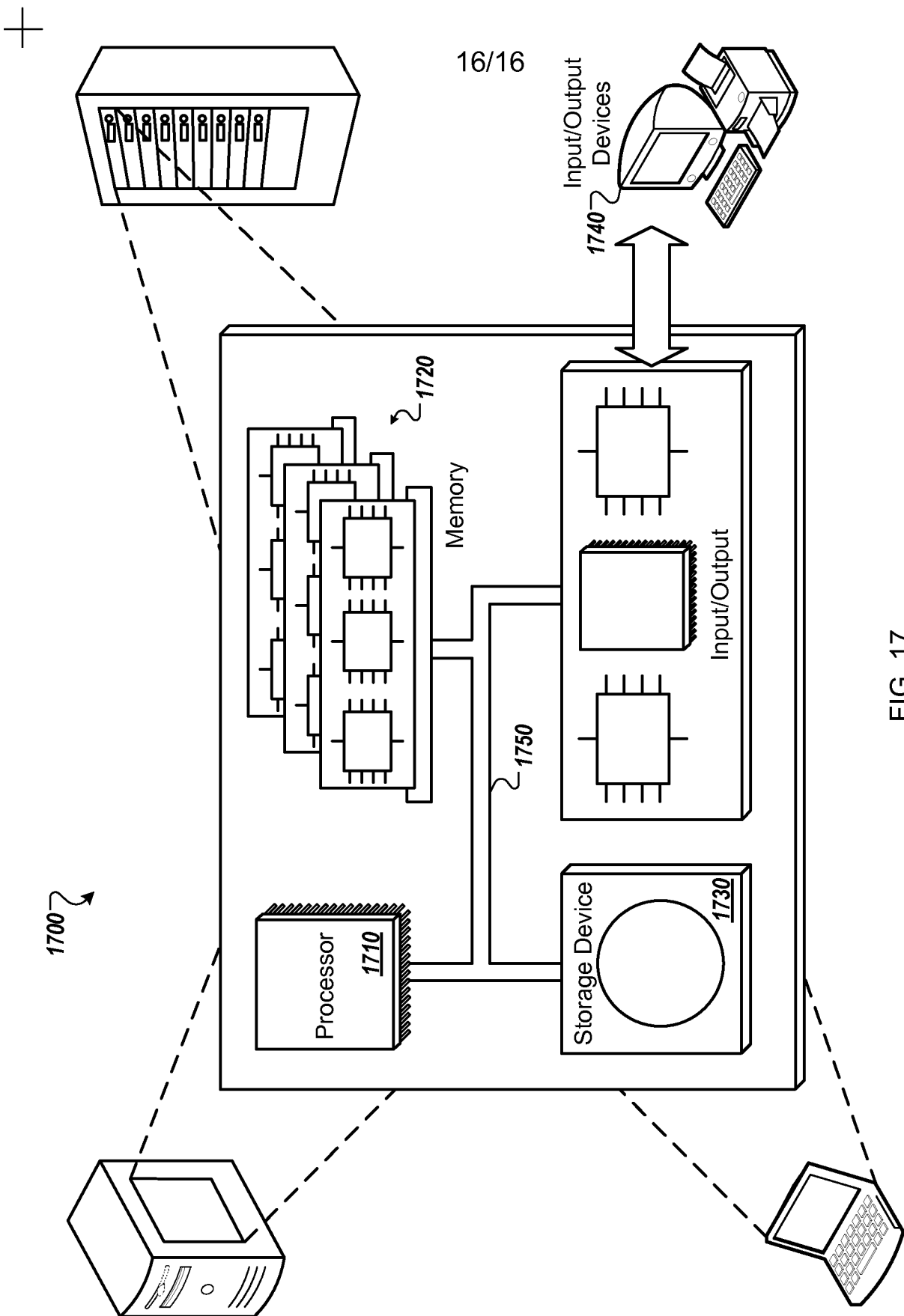


FIG. 17

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

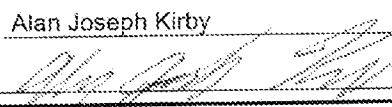
Title of Invention	SECURITY RISK MANAGEMENT		
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ [X] The attached application, or ☐ [] United States application or PCT international application number _____ filed on _____ The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. LEGAL NAME OF INVENTOR Inventor: <u>Philip John Steuart Gladstone</u> Date (Optional): <u>SEP-9-2013</u> Signature: <u><i>Philip J. Gladstone</i></u> Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.			

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

23085618.doc

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

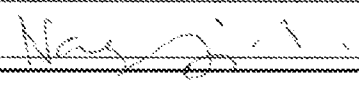
Title of Invention	SECURITY RISK MANAGEMENT		
As the below named inventor, I hereby declare that:			
This declaration is directed to:		☒ The attached application, or	
		☐ United States application or PCT international application number	
		filed on	
The above-identified application was made or authorized to be made by me.			
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.			
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.			
WARNING:			
Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.			
LEGAL NAME OF INVENTOR			
Inventor:	Alan Joseph Kirby		Date (Optional): <u>Sept 9, 2013</u>
Signature:			
Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.			

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

23085638.doc

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	SECURITY RISK MANAGEMENT
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT International application number _____ filed on _____ The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.	
LEGAL NAME OF INVENTOR Inventor: <u>Nagarjuna Venna</u> Date (Optional): <u>9-9-13</u> Signature: <u></u>	
Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

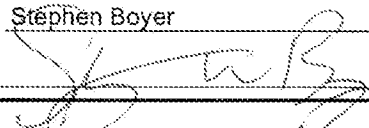
This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

23085638.doc

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

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

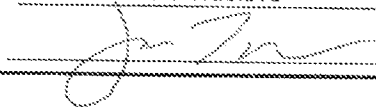
Title of Invention	SECURITY RISK MANAGEMENT		
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ filed on _____ The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.			
LEGAL NAME OF INVENTOR			
Inventor:	Stephen Boyer		Date (Optional): 09/09/13
Signature:			
Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.			

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

23085638.doc

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	SECURITY RISK MANAGEMENT
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ _____ filed on _____ The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. LEGAL NAME OF INVENTOR Inventor: <u>John Matthew Truelove</u> Date (Optional): <u>9/9/13</u> Signature: <u></u> Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

21085634.doc

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

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	SECURITY RISK MANAGEMENT	
As the below named inventor, I hereby declare that: This declaration ☒ The attached application, or is directed to: ☐ United States application or PCT international application number _____ filed on _____ The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.		
LEGAL NAME OF INVENTOR		
Inventor:	David Feinzeig	Date (Optional): <u>Sept 9 2013</u>
Signature:	<u>David Feinzeig</u>	
Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.		

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

23085638.doc

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : BitSight Technologies, Inc. Art Unit : Unknown
Serial No. : unknown Examiner : Unknown
Filed : September 9, 2013
Title : SECURITY RISK MANAGEMENT

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

INFORMATION DISCLOSURE STATEMENT

Please consider the reference listed on the enclosed PTO-SB-08 or Disclosure Form.

Non-patent literature is enclosed.

This statement is being filed with the application. Please apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: September 9, 2013_____

/Joel D. Couenhoven/_____
Joel D. Couenhoven
Reg. No. 68,848

Customer Number 26161
Fish & Richardson P.C.
Telephone: (202) 783-5070
Facsimile: (877) 769-7945

23085768.doc

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 14/021,585	Filing Date 09/09/2013	☐ 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	70
☒ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300
☒ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360
TOTAL CLAIMS (37 CFR 1.16(i))	31 minus 20 =	* 11	x \$40 =	440
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	* 0	x \$210 =	0
☐ 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	1170

APPLICATION AS AMENDED – PART II

(Column 1)

(Column 2)

(Column 3)

AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	MINUS	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	

(Column 1)

(Column 2)

(Column 3)

AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	MINUS	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.

LDRC
/EVA GILLIS/

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.