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.
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	6419

122066 7590 03/12/2024

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

EXAMINER	
WON, MICHAEL YOUNG	

ART UNIT	PAPER NUMBER
2443	

NOTIFICATION DATE	DELIVERY MODE
03/12/2024	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):

eofficeaction@appcoll.com
pair@mb-ip.com

APPLICATION NO.	ISSUE DATE	PATENT NO.
17/161,190	12-Mar-2024	11929896

M&B IP Analysts, LLC
150 Morristown Road
Bernardsville, NJ 07924-2626

EGRANT NOTIFICATION

Your electronic patent grant (eGrant) is now available, which can be accessed via Patent Center at https://patentcenter.uspto.gov

The electronic patent grant is the official patent grant under 35 U.S.C. 153. For more information, please visit https://www.uspto.gov/electronicgrants

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.
17/161,190	03/12/2024	11929896	WZIO P1933	6419

122066 7590 02/21/2024

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

ISSUE NOTIFICATION

The projected patent number and issue date are specified above. The patent will issue electronically. The electronically issued patent is the official patent grant pursuant to 35 U.S.C. § 153. The patent may be accessed on or after the issue date through Patent Center at https://patentcenter.uspto.gov/. The patent will be available in both the public and the private sides of Patent Center. Further assistance in electronically accessing the patent, or about Patent Center, is available by calling the Patent Electronic Business Center at 1-888-217-9197.

The USPTO is implementing electronic patent issuance with a transition period, during which period the USPTO will mail a ceremonial paper copy of the electronic patent grant to the correspondence address of record. Additional copies of the patent (i.e., certified and presentation copies) may be ordered for a fee from the USPTO's Certified Copy Center at https://certifiedcopycenter.uspto.gov/index.html. The Certified Copy Center may be reached at (800)972-6382.

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

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

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

Applicant will be able to obtain more detailed information by accessing the Patent Center (https://patentcenter.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 Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PATENT CENTER site https://patentcenter.uspto.gov for additional inventors):

Daniel Hershko SHEMESH, Netanya, ISRAEL;
Liran MOYSI, Kfar Saba, ISRAEL;
Roy REZNIK, Tel Aviv, ISRAEL;
Shai KEREN, Ramat Gan, ISRAEL;

APPLICANT(s) (Please see PATENT CENTER site https://patentcenter.uspto.gov for additional applicants):

Wiz, Inc., Palo Alto, CA;

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.

IPR2025-01084
Orca Security EX1002 Page 4

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

Assignment ID: PATI33607

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT
NATURE OF CONVEYANCE:	Corrective Assignment to correct the DANNY SHEMESH TO DANIEL HERSHKO SHEMESH previously recorded on Reel 55067 Frame 957. Assignor(s) hereby confirms the ASSIGNMENT.
RESUBMIT DOCUMENT ID:	508348210

CONVEYING PARTY DATA

Name	Execution Date
DANIEL HERSHKO SHEMESH	01/13/2021
LIRAN MOYSI	01/16/2021
ROY REZNIK	01/13/2021
SHAI KEREN	01/16/2021

RECEIVING PARTY DATA

Company Name:	WIZ, INC.
Street Address:	2345 YALE STREET
City:	PALO ALTO
State/Country:	CALIFORNIA
Postal Code:	94306

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	17161190

CORRESPONDENCE DATA

Fax Number: 9082743113

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 9082743111
Email: pair@mb-ip.com
Correspondent Name: M&B IP ANALYSTS
Address Line 1: 150 MORRISTOWN RD
Address Line 4: BERNARDSVILLE, NEW JERSEY 07924

ATTORNEY DOCKET NUMBER:	WZIO P1933
NAME OF SUBMITTER:	Sydney Manning
SIGNATURE:	Sydney Manning
DATE SIGNED:	02/16/2024
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 4
source=WZIO_P1933_Corrective_Assignment_initialed_20240216#page1.tif
source=WZIO_P1933_Corrective_Assignment_initialed_20240216#page2.tif
source=WZIO_P1933_Corrective_Assignment_initialed_20240216#page3.tif
source=WZIO_P1933_Corrective_Assignment_initialed_20240216#page4.tif

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6521997

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
~~DANNY SHEMESH~~ **Daniel Hershko Shemesh**	01/13/2021
LIRAN MOYSI	01/16/2021
ROY REZNIK	01/13/2021
SHAI KEREN	01/16/2021

RECEIVING PARTY DATA

Name:	WIZ, INC.
Street Address:	2345 YALE STREET
City:	PALO ALTO
State/Country:	CALIFORNIA
Postal Code:	94306

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	17161190

CORRESPONDENCE DATA

Fax Number: (908)274-3113

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 908-274-3111
Email: pair@mb-ip.com
Correspondent Name: M&B IP ANALYSTS, LLC
Address Line 1: 150 MORRISTOWN ROAD
Address Line 4: BERNARDSVILLE, NEW JERSEY 07924-2626

ATTORNEY DOCKET NUMBER:	WZIO P1933
NAME OF SUBMITTER:	MICHAEL BEN-SHIMON
SIGNATURE:	/Michael Ben-Shimon/
DATE SIGNED:	01/28/2021
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 3
source=WZIO_P1933_decl_assign_20210128#page1.tif

Attorney Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

The undersigned authorizes and requests the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

The undersigned covenants and agrees that he has full right to convey the entire interest herein assigned, and has not executed, and will not execute, any agreement in conflict herewith.

The undersigned further covenants and agrees that he will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The undersigned hereby grants the practitioners of M&B IP Analysts, LLC the power to insert any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

DS
DHS
2/16/2024

In witness whereof, executed by the undersigned on the date opposite the undersigned name.

Daniel Hershko Shemesh

1. Full name of joint inventor: ~~**Danny SHEMESH**~~

Inventor's Signature: / DocuSigned by: 48F7285C7A894A3... ***/ Date:*** 1/13/2021

Residence: Netanya, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

2. Full name of joint inventor: **Liran MOYSI**

Inventor's Signature: / ***/ Date:*** 1/16/2021

Residence: Kfar Saba, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

3. Full name of joint inventor: **Roy REZNIK**

Inventor's Signature: / DocuSigned by: ***/ Date:*** 1/13/2021

Residence: Tel Aviv, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

Attorney Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

4. Full name of joint inventor: **Shai KEREN**

Inventor's Signature: /  ***/ Date:*** 01/16/2021

Residence: Ramat Gan, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

The undersigned authorizes and requests the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

The undersigned covenants and agrees that he has full right to convey the entire interest herein assigned, and has not executed, and will not execute, any agreement in conflict herewith.

The undersigned further covenants and agrees that he will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The undersigned hereby grants the practitioners of **M&B IP Analysts, LLC** the power to insert any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

In witness whereof, executed by the undersigned on the date below the undersigned name.

Inventor's Printed Name in English:	Daniel Hershko SHEMESH
Inventor's Residence:	Givat Shmuel Israel
Inventor's Signature:	DocuSigned by: / [signature] /
Date:	11/21/2021 48F7285C7A894A3...

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.
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	6419

122066 7590 02/05/2024

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

EXAMINER	
WON, MICHAEL YOUNG	

ART UNIT	PAPER NUMBER
2443	

NOTIFICATION DATE	DELIVERY MODE
02/05/2024	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):

eofficeaction@appcoll.com
pair@mb-ip.com

Response to Rule 312 Communication	Application No.	Applicant(s)	
	17/161,190	SHEMESH et al.	
	Examiner	Art Unit	AIA (FITF) Status
	MICHAEL Y WON	2443	Yes

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

1. ☑ The amendment filed on 23 January 2024 under 37 CFR 1.312 has been considered, and has been:
   a) ☑ entered.
   b) ☐ entered as directed to matters of form not affecting the scope of the invention.
   c) ☐ disapproved because the amendment was filed after the payment of the issue fee.
      Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.
   d) ☐ disapproved. See explanation below.
   e) ☐ entered in part. See explanation below.
   f) ☐ not entered because the supplemental or corrected Application Data sheet (ADS)
      ☐ was not accompanied by a petition to accept an unintentionally delayed claim under 37 CFR 1.55 or 27 CFR 1.78;
      ☐ did not identify the information being changed in accordance with 37 CFR 1.76(c)(2);
      ☐ was not properly signed in accordance with 37 CFR 1.76(e) (or 37 CFR 1.33(b) for applications filed prior to September 16, 2012).

/Michael Won/
Primary Examiner, Art Unit 2443

OK TO ENTER: /MW/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:		Daniel Hershko Shemesh
Serial No.	:	17/161,190
Filed	:	January 28, 2021
Attorney Docket No.	:	WZIO P1933
Examiner	:	Won, Michael Young
Group Art Unit	:	2443
Confirmation No.	:	6419

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

AMENDMENT UNDER 37 C.F.R. §1.312

In response to the Notice of Allowance dated **November 2, 2023**, Applicant requests the following amendments to the claims be entered prior to issuance.

Amendments to the claims begin on page 2 of this paper.

Remarks begin on page 10 of this paper.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (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 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. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

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

122066 7590 11/02/2023
M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	6419

TITLE OF INVENTION: SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	02/02/2024

EXAMINER	ART UNIT	CLASS-SUBCLASS
WON, MICHAEL YOUNG	2443	709-224000

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/AIA/122 or PTO/SB/122) attached.

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

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

1 M&B IP Analysts, LLC
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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE WIZ, INC. (B) RESIDENCE: (CITY and STATE OR COUNTRY) NEW YORK, NEW YORK

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

4a. Fees submitted: ☒ Issue Fee ❑ Publication Fee (if required)

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

☒ Electronic Payment via Patent Center or EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge ~~the required fee(s)~~, any deficiency, or credit any overpayment to Deposit Account No. 506438

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

❑ Applicant certifying micro entity status. See 37 CFR 1.29

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

❑ Applicant asserting small entity status. See 37 CFR 1.27

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

❑ Applicant changing to regular undiscounted fee status.

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

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

Authorized Signature /Eugene Jay Rosenthal/ Date 2023-01-23

Typed or printed name Eugene Jay Rosenthal Registration No. 36658

PTOL-85 Part B (08-18) Approved for use through 01/31/2020 OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

IPR2025-01084
Orca Security EX1002 Page 14

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	**01/24/2024 04:31:27 PM Z ET**	**WZIO P1933**

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Sydney Manning
PATENT CENTER #	64064510	AUTHORIZED BY	Eugene Rosenthal
CUSTOMER #	122066	FILING DATE	01/28/2021
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 3356	**E20241NG32206367**	**Sydney Manning**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1501	UTILITY ISSUE FEE	1200.00	1	1200.00
			TOTAL AMOUNT:	**$1,200.00**

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage

submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	**01/24/2024 04:31:27 PM Z ET**	**WZIO P1933**

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Sydney Manning
PATENT CENTER #	64064510	FILING DATE	01/28/2021
CUSTOMER #	122066	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Eugene Rosenthal

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
WZIO_P1933_part_b_fees_20240123.pdf	1	Issue Fee Payment (PTO-85B)	207 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
WZIO_P1933_part_b_fees_20240123.pdf	F20CE307DA205CC561015882B01CE3A9CA51E00389736A6B9B64E32E11F9DF80483F6B63F41E6618144D6521AC8AC26383057FA72FA7D79BE9180BB87A8E3D55

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 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:		Daniel Hershko Shemesh
Serial No.	:	17/161,190
Filed	:	January 28, 2021
Attorney Docket No.	:	WZIO P1933
Examiner	:	Won, Michael Young
Group Art Unit	:	2443
Confirmation No.	:	6419

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

AMENDMENT UNDER 37 C.F.R. §1.312

In response to the Notice of Allowance dated **November 2, 2023**, Applicant requests the following amendments to the claims be entered prior to issuance.

Amendments to the claims begin on page 2 of this paper.

Remarks begin on page 10 of this paper.

AMENDMENTS TO THE CLAIMS

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

1. (Previously Presented) A method for generation of unified graph models for network entities, comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the generic network entities of the plurality of network entities; and

storing the generated network graph.

2. (Previously Presented) The method of claim 1, wherein the network entity property relates to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration.

3. (Previously Presented) The method of claim 1, wherein genericizing each of the network entities further comprises:

generating a new generic network entity, wherein the new generic network entity includes at least a network entity property of network entities.

4. (Currently Amended) The method of claim 1, wherein [[the]] a new generic network entity includes at least a network entity property of [[the]] at least one network entity.

5. (Original) The method of claim 1, further comprising:

creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities.

6. (Previously Presented) The method of claim 5, wherein creating at least one imputed entity comprises:

identifying at least one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity.

7. (Previously Presented) The method of claim 6, wherein the generated network graph is a unified representation of the plurality of network entities including the imputed network entities and the generic network entities.

8. (Cancelled)

9. (Previously Presented) The method of claim 1, wherein the generated network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

10. (Original) The method of claim 9, wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

11. (Original) The method of claim 9, wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity.

12. (Original) The method of claim 11, wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge.

13. (Previously Presented) The method of claim 1, wherein storing the generated network graph further comprises:

returning at least a visualization of the generated at least one network graph.

14. (Previously Presented) The method of claim 1, wherein storing the generated at network graph further comprises:

storing the generated network graph in a graph database.

15. (Original) The method of claim 1, wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection.

16. (Previously Presented) A non-transitory computer readable medium having stored thereon instructions for causing a processing circuitry to execute a process for generation of unified graph models for network entities, the process comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the network entities of the plurality of network entities; and

storing the generated network graph.

17. (Previously Presented) A system for generating unified graph models for network entities, comprising:

a processing circuitry; and

a memory, the memory containing instructions that, when executed by the processing circuitry, configure the system to:

collect, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericize each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generate at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and

store the generated network graph.

18. (Previously Presented) The system of claim 17, wherein the network entity property relates to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration.

19. (Previously Presented) The system of claim 17, wherein the system is further configured to:

generate a new generic network entity, wherein the new generic network entity includes at least a network entity property of network entities.

20. (Currently Amended) The system of claim 17, wherein [[the]] a new generic network entity includes at least a network entity property of [[the]] at least one network entity.

21. (Original) The system of claim 17, wherein the system is further configured to:

create at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities.

22. (Previously Presented) The system of claim 21, wherein the system is further configured to:

identify at least one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity.

23. (Previously Presented) The system of claim 22, wherein the generated network graph is a unified representation of the plurality of network entities including the imputed network entities and the generic network entities.

24. (Cancelled)

25. (Original) The system of claim 17, wherein the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

26. (Original) The system of claim 25, wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

27. (Original) The system of claim 25, wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity.

28. (Original) The system of claim 27, wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge.

29. (Previously Presented) The system of claim 17, wherein the system is further configured to:

return at least a visualization of the network graph.

30. (Original) The system of claim 17, wherein the system is further configured to:

store the generated network graph in a graph database.

31. (Original) The system of claim 17, wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection.

32. (Previously Presented) The method of claim 3, wherein the generic network entity represents at least an entity configured to apply security rules.

33. (Previously Presented) The system of claim 19, wherein the generic network entity represents at least an entity configured to apply security rules.

REMARKS

Amendments to claims 4 and 20 are hereby presented to avoid potential antecedent basis issues and place the claims in better condition for allowance. No new matter has been added.

Appropriate consideration and entry of the amendments prior to issuance are respectfully requested.

CONCLUSION

If the examiner has any questions or concerns, the Examiner is invited to contact the undersigned at 908-274-3111, so that a mutually convenient date and time for a telephonic interview may be scheduled.

Any fee due this paper may be charged to, or overpayment credited to, deposit account **50-6438.**

Respectfully submitted,
M&B IP Analysts, LLC

/Michael Ben-Shimon/
Michael Ben-Shimon
Reg. No.: 69,610

Mail all correspondence to:
CUSTOMER NO.: 122066
M&B IP Analysts, LLC
908-274-3111

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	**01/23/2024 02:28:27 PM Z ET**	**WZIO P1933**

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Sydney Manning
PATENT CENTER #	64048012	FILING DATE	01/28/2021
CUSTOMER #	122066	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Michael Ben-Shimon

Documents

TOTAL DOCUMENTS: 3

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
WZIO_P1933_312_amendment_20240123.pdf		11	-	103 KB
WZIO_P1933_312_amendment_20240123-A.NA.pdf	(1-1)	1	Amendment after Notice of Allowance (Rule 312)	76 KB
WZIO_P1933_312_amendment_20240123-CLM.pdf	(2-9)	8	Claims	92 KB
WZIO_P1933_312_amendment_20240123-REM.pdf	(10-11)	2	Applicant Arguments/Remarks Made in an Amendment	77 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
WZIO_P1933_312_amendment_20240123.pdf	F77BE55DFDC395C964CC3775B24DA65E0044EF162BCF14E05625AB1958155AA7E9DE0B29E962FE0178F46CD6BB0B3F8FC0915341778 9C72A7030868242991954
WZIO_P1933_312_amendment_20240123-A.NA.pdf	03A8D5D947947B855C74576C6562FCABE740AF4E2CB224508F7CA54F557959206B69264FFE895A865EFBF38E384B5826ECF6FA4274A2B8C7BA8E1156F365506A
WZIO_P1933_312_amendment_20240123-CLM.pdf	5B92D37DF8D33F29E69117471CFF722145775865C4ABAE16A9093616E0D895AD45B76D433DD45C4D944B4FB990EA29FDC4B863A508D910A0C9643804E6F3D82C
WZIO_P1933_312_amendment_20240123-REM.pdf	33F2A9B2977958796A73188E38BAE7EB11653600EEDFBBCFD895FC7092C06E2ED0E54C290ED4195F3F452723F69F633C64E492B42AEEEC1C225031F303D5AEF0

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 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 ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT8395402

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT
NATURE OF CONVEYANCE:	Corrective Assignment to correct the DANNY SHEMESH TO DANIEL HERSHKO SHEMESH previously recorded on Reel 055067 Frame 0957. Assignor(s) hereby confirms the ASSIGNMENT.

CONVEYING PARTY DATA

Name	Execution Date
DANIEL HERSHKO SHEMESH	01/13/2021
LIRAN MOYSI	01/16/2021
ROY REZNIK	01/13/2021
SHAI KEREN	01/16/2021

RECEIVING PARTY DATA

Name:	WIZ, INC.
Street Address:	2345 YALE STREET
City:	PALO ALTO
State/Country:	CALIFORNIA
Postal Code:	94306

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	17161190

CORRESPONDENCE DATA

Fax Number: (908)274-3113

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 9082743111
Email: pair@mb-ip.com
Correspondent Name: M&B IP ANALYSTS
Address Line 1: 150 MORRISTOWN RD
Address Line 2: SUITE 205
Address Line 4: BERNARDSVILLE, NEW JERSEY 07924

ATTORNEY DOCKET NUMBER:	WZIO P1933
NAME OF SUBMITTER:	MICHAEL BEN-SHIMON
SIGNATURE:	/Michael Ben-Shimon/
DATE SIGNED:	01/23/2024
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 5
source=WZIO_P1933_Corrective_Assignment_20230905#page1.tif
source=WZIO_P1933_Corrective_Assignment_20230905#page2.tif
source=WZIO_P1933_Corrective_Assignment_20230905#page3.tif
source=WZIO_P1933_Corrective_Assignment_20230905#page4.tif
source=WZIO_P1933_Corrective_Assignment_20230905#page5.tif

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6521997

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
~~DANNY SHEMESH~~ Daniel Hershko Shemesh	01/13/2021
LIRAN MOYSI	01/16/2021
ROY REZNIK	01/13/2021
SHAI KEREN	01/16/2021

RECEIVING PARTY DATA

Name:	WIZ, INC.
Street Address:	2345 YALE STREET
City:	PALO ALTO
State/Country:	CALIFORNIA
Postal Code:	94306

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	17161190

CORRESPONDENCE DATA

Fax Number: (908)274-3113

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 908-274-3111
Email: pair@mb-ip.com
Correspondent Name: M&B IP ANALYSTS, LLC
Address Line 1: 150 MORRISTOWN ROAD
Address Line 4: BERNARDSVILLE, NEW JERSEY 07924-2626

ATTORNEY DOCKET NUMBER:	WZIO P1933
NAME OF SUBMITTER:	MICHAEL BEN-SHIMON
SIGNATURE:	/Michael Ben-Shimon/
DATE SIGNED:	01/28/2021
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 3
source=WZIO_P1933_decl_assign_20210128#page1.tif

source=WZIO_P1933_decl_assign_20210128#page2.tif
source=WZIO_P1933_decl_assign_20210128#page3.tif

Attorney Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

As a below named inventor (designated as "the undersigned"), I hereby declare that:

This declaration is directed to: ☒ The attached application, or

☐ United States Application No.__ filed on _

The application is entitled:

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

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 have reviewed and understand the contents of the above-identified application.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

POWER OF ATTORNEY: I hereby appoint all attorneys and agents of **M&B IP ANALYSTS, LLC** who are listed under the USPTO Customer Number shown below as my attorneys to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith.

Address all correspondence to **CUSTOMER NUMBER 122066**.

The undersigned hereby acknowledges 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.

ASSIGNMENT

WHEREAS, **Wiz, Inc.**, having an address at **2345 Yale Street, Palo Alto, California 94306 USA** (hereinafter "ASSIGNEE"), is desirous of acquiring the entire right, title and interest in, to and under the above-identified application and invention, and to any Letters Patent(s) that may be granted therefor.
NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the undersigned has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, the entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventor's certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

Attorney Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

The undersigned authorizes and requests the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

The undersigned covenants and agrees that he has full right to convey the entire interest herein assigned, and has not executed, and will not execute, any agreement in conflict herewith.

The undersigned further covenants and agrees that he will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The undersigned hereby grants the practitioners of M&B IP Analysts, LLC the power to insert any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

In witness whereof, executed by the undersigned on the date opposite the undersigned name.

Daniel Hershko Shemesh

1. Full name of joint inventor: ~~**Danny SHEMESH**~~

Inventor's Signature: / DocuSigned by: 48F7285C7A894A3... ***/ Date:*** 1/13/2021

Residence: Netanya, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

2. Full name of joint inventor: **Liran MOYSI**

Inventor's Signature: / ***/ Date:*** 1/16/2021

Residence: Kfar Saba, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

3. Full name of joint inventor: **Roy REZNIK**

Inventor's Signature: / DocuSigned by: ***/ Date:*** 1/13/2021

Residence: Tel Aviv, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

Attorney Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

4. Full name of joint inventor: **Shai KEREN**

Inventor's Signature: /  ***/ Date:*** 01/16/2021

Residence: Ramat Gan, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

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

122066 7590 11/02/2023

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

EXAMINER	
WON, MICHAEL YOUNG	
ART UNIT	PAPER NUMBER
2443	

DATE MAILED: 11/02/2023

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	6419

TITLE OF INVENTION: SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	02/02/2024

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 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted 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. 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: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PTOL-85 (Rev. 02/11)

IPR2025-01084
Orca Security EX1002 Page 39

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (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 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. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

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

122066 7590 11/02/2023
M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	6419

TITLE OF INVENTION: SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	02/02/2024

EXAMINER	ART UNIT	CLASS-SUBCLASS
WON, MICHAEL YOUNG	2443	709-224000

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/AIA/122 or PTO/SB/122) attached.

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

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

1 _____
2 _____
3 _____

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

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). 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. Fees submitted: ❑Issue Fee ❑Publication Fee (if required)

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

❑ Electronic Payment via Patent Center or EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

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

❑ Applicant certifying micro entity status. See 37 CFR 1.29

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

❑ Applicant asserting small entity status. See 37 CFR 1.27

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

❑ Applicant changing to regular undiscounted fee status.

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

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

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

IPR2025-01084
Orca Security EX1002 Page 40

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.
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	6419

122066 7590 11/02/2023

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

EXAMINER	
WON, MICHAEL YOUNG	
ART UNIT	PAPER NUMBER
2443	

DATE MAILED: 11/02/2023

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.

IPR2025-01084
Orca Security EX1002 Page 41

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 30 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. 17/161,190	Applicant(s) SHEMESH et al.	
	Examiner MICHAEL Y WON	Art Unit 2443	AIA (FITF) 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 Appeal Brief filed 9/7/2023 and the Interview conducted on 10/12/2023.
   ☐ 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 See Continuation Sheet . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

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

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

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

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

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

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

Attachment(s)

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

/Michael Won/
Primary Examiner, Art Unit 2443

Continuation of 3. The allowed claim(s) is/are: 1-4,6-7,9-20,22-23 and 25-33

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

2. In view of the Appeal Brief filed on September 7, 2023, and responsive to an Appeal Conference on October 11, 2023, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31. A new notice of appeal fee and appeal brief fee will not be required for applicant to appeal from the new Office action. Any appeal brief filed on or after September 13, 2004 must comply with 37 CFR 41.37.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below.

/NICHOLAS R TAYLOR/
Supervisory Patent Examiner, Art Unit 2443

EXAMINER'S AMENDMENT

3. 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.

4. Authorization for this examiner's amendment was given in a telephone interview with Michael Ben-Shimon (Reg. No. 69,610) on October 12, 2023.

5. The application has been amended as follows:

1. (**Currently Amended**) A method for generation of unified graph models for network entities, comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the generic network entities of the plurality of network entities; and

creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, and wherein the executed platform functionality is different than a network entity; and

storing the generated network graph.

5. (**Currently Cancelled**)

6. (**Currently Amended**) The method of claim [[5]] 1, wherein creating at least one imputed entity comprises:

identifying at least one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity.

16. (**Currently Amended**) A non-transitory computer readable medium having stored thereon instructions for causing a processing circuitry to execute a process for generation of unified graph models for network entities, the process comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the network entities of the plurality of network entities;

creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, and wherein the executed platform functionality is different than a network entity; and

storing the generated network graph.

17. (**Currently Amended**) A system for generating unified graph models for network entities, comprising:

a processing circuitry; and

a memory, the memory containing instructions that, when executed by the processing circuitry, configure the system to:

collect, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericize each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generate at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities;

creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, and wherein the executed platform functionality is different than a network entity; and

store the generated network graph.

21. (**Currently Cancelled**)

22. (**Currently Amended**) The system of claim [[21]] 17, wherein the system is further configured to:

identify at least one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity.

Allowable Subject Matter

6. Claims 1-4, 6, 7, 9-20, 22, 23, and 25-33 are allowable over prior art of record in light of the arguments presented in the Appeal Brief filed September 7, 2023 and the Examiner's Amendment above.

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

The prior art of record does not disclose, teach, or suggest neither singly nor in combination the claimed limitation of "collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms; genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities

from different cloud computing platforms of the plurality of cloud computing platforms; generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the generic network entities of the plurality of network entities; and creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, and wherein the executed platform functionality is different than a network entity; and storing the generated network graph" as recited in independent claims 1, 16, and 17.

For at least these reasons above, claims 1-4, 6, 7, 9-20, 22, 23, and 25-33 are allowable.

8. 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."

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL Y WON whose telephone number is (571)272-3993. The examiner can normally be reached on Wk.1: M-F: 8-5 PST & Wk.2: M-Th: 8-7 PST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nicholas R Taylor can be reached on 571-272-3889. 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.

/Michael Won/
Primary Examiner, Art Unit 2443

Examiner-Initiated Interview Summary	**Application No.** 17/161,190	**Applicant(s)** SHEMESH et al.		
	Examiner MICHAEL Y WON	**Art Unit** 2443	**AIA (First Inventor to File) Status** Yes	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
MICHAEL Y WON	Primary Examiner	Telephonic
Michael Ben-Shimon (Reg. No. 69,610)	Attorney of Record	

Date of Interview: 17 October 2023

Issues Discussed:

Proposed Amendment(s)

Examiner called on October 12, 2023 in an attempt to expedite prosecution by amending independent claims to include limitations of claim 5. Applicant called back on October 17, 2023 agreeing to the proposed amendment (see Examiner's Amendment).

/Michael Won/ Primary Examiner, Art Unit 2443	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	**Art Unit**
	MICHAEL Y WON	2443

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	12/17/2021	04/01/2022	10/04/2022	03/01/2023	10/19/2023				
1	1	✓	✓	✓	✓	=				
2	2	✓	✓	✓	✓	=				
3	3	✓	✓	✓	✓	=				
4	4	✓	✓	✓	✓	=				
	5	✓	✓	✓	✓	-				
5	6	✓	✓	✓	✓	=				
6	7	✓	✓	✓	✓	=				
	8	✓	-	-	-	-				
7	9	✓	✓	✓	✓	=				
8	10	✓	✓	✓	✓	=				
9	11	✓	✓	✓	✓	=				
10	12	✓	✓	✓	✓	=				
11	13	✓	✓	✓	✓	=				
12	14	✓	✓	✓	✓	=				
13	15	✓	✓	✓	✓	=				
14	16	✓	✓	✓	✓	=				
15	17	✓	✓	✓	✓	=				
16	18	✓	✓	✓	✓	=				
17	19	✓	✓	✓	✓	=				
18	20	✓	✓	✓	✓	=				
	21	✓	✓	✓	✓	-				
19	22	✓	✓	✓	✓	=				
20	23	✓	✓	✓	✓	=				
	24	✓	-	-	-	-				
21	25	✓	✓	✓	✓	=				
22	26	✓	✓	✓	✓	=				
23	27	✓	✓	✓	✓	=				
24	28	✓	✓	✓	✓	=				
25	29	✓	✓	✓	✓	=				
26	30	✓	✓	✓	✓	=				
27	31	✓	✓	✓	✓	=				
28	32		✓	✓	✓	=				
29	33		✓	✓	✓	=				

IPR2025-01084
Orca Security EX1002 Page 52

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	Art Unit
	MICHAEL Y WON	2443

CPC - Searched*		
Symbol	Date	Examiner
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	12/16/2021	MW
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	10/04/2022	MW
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	02/28/2023	MW
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	10/11/2023	MW
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	10/12/2023	MW

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	Art Unit
	MICHAEL Y WON	2443

Search Notes		
Search Notes	**Date**	**Examiner**
PE2E SEARCH	12/16/2021	MW
INVENTOR/ASSIGNEE SEARCH	12/16/2021	MW
NPL SEARCH: DIALOG	12/17/2021	MW
PE2E SEARCH	10/04/2022	MW
NPL SEARCH: DIALOG	10/04/2022	MW
PE2E SEARCH	02/28/2023	MW
NPL SEARCH: DIALOG	03/01/2023	MW
PE2E SEARCH	10/11/2023	MW
PE2E SEARCH	10/12/2023	MW
NPL SEARCH: DIALOG	10/12/2023	MW
PE2E SEARCH	10/19/2023	MW

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
H04L	43/045	10/19/2023	MW

IPR2025-01084
Orca Security EX1002 Page 54

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	**Art Unit**
	MICHAEL Y WON	2443

CPC							
Symbol						**Type**	**Version**
H04L	/	43	/	045		F	2013-01-01
G06F	/	16	/	9024		I	2019-01-01
H04L	/	43	/	08		I	2013-01-01
H04L	/	67	/	10		A	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	29	
/Michael Won/ Primary Examiner, Art Unit 2443	19 October 2023	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20231011

IPR2025-01084
Orca Security EX1002 Page 55

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	**Art Unit**
	MICHAEL Y WON	2443

INTERNATIONAL CLASSIFICATION				
CLAIMED				
H04L	/	43	/	045

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	29	
/Michael Won/ Primary Examiner, Art Unit 2443	19 October 2023	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20231011

IPR2025-01084
Orca Security EX1002 Page 56

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	**Art Unit**
	MICHAEL Y WON	2443

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

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	8	10	17	19	24	28								
2	2	9	11	18	20	25	29								
3	3	10	12		21	26	30								
4	4	11	13	19	22	27	31								
	5	12	14	20	23	28	32								
5	6	13	15		24	29	33								
6	7	14	16	21	25										
	8	15	17	22	26										
7	9	16	18	23	27										

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	29	
/Michael Won/ Primary Examiner, Art Unit 2443	19 October 2023	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20231011

IPR2025-01084
Orca Security EX1002 Page 57

Bibliographic Data

Application No: 17/161,190

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /Michael Won/ Examiner's Signature | Initials

Title: SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
01/28/2021	709	2443	WZIO P1933
RULE			

APPLICANTS

Wiz, Inc., Palo Alto, CA, UNITED STATES

INVENTORS

Daniel Hershko SHEMESH, Netanya, ISRAEL

Liran MOYSI, Kfar Saba, ISRAEL

Roy REZNIK, Tel Aviv, ISRAEL

Shai KEREN, Ramat Gan, ISRAEL

CONTINUING DATA

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

STATE OR COUNTRY

ISRAEL

ADDRESS

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626
UNITED STATES

FILING FEE RECEIVED

$1,380

Dialog®

STIC
Scientific and Technical Information Center

Search Strategy from Dialog

October 19 2023 16:57

IPR2025-01084
Orca Security EX1002 Page 59

Search Strategy

Databases: ABI/INFORM® Professional Advanced, Abstracts in New Technology & Engineering, AdisInsight: Drugs, AdisInsight: Trials, Adis Pharmacoeconomics & Outcomes News, AGRICOLA, AGRIS, Allied & Complementary Medicine™, Analytical Abstracts, APA PsycInfo®, Aqualine, Aquatic Science & Fisheries Abstracts (ASFA), Australian Education Index, BIOSIS® Toxicology, BIOSIS Previews®, British Library Inside Conferences, British Nursing Index, Business & Industry, CAB ABSTRACTS, Chemical Business Newsbase, Chemical Engineering & Biotechnology Abstracts, Chemical Safety Newsbase, Civil Engineering Abstracts, ClinicalTrials.gov, Current Contents® Search, Derwent Drug File, Derwent Drug Registry, DH-DATA: Health Administration, Medical Toxicology & Environmental Health, DIOGENES® FDA Regulatory Updates, Drug Information Fulltext, Earthquake Engineering Abstracts, EconLit, Ei Compendex®, Ei EnCompassLIT, Embase®, Embase® French Local Literature, Embase Preprints, EMCare®, ERIC, ESPICOM Pharmaceutical & Medical Device News, FDAnews, FLUIDEX (Fluid Engineering Abstracts), Foodline®: MARKET, Foodline®: PRODUCT, Foodline®: SCIENCE, FSTA®, Gale Group Computer Database™, Gale Group Health Periodicals Database, Gale Group New Product Announcements / Plus®, Gale Group Newsletter Database™, Gale Group PharmaBiomed Business Journals, Gale Group PROMT®, Gale Group Trade & Industry Database™, GEOBASE, GeoRef, Global Health, HSELINE: Health and Safety, ICONDA - International Construction Database, IMS Company Profiles, IMS New Product Focus, IMS Pharma Trademarks, IMS R&D Focus, IMS R&D Focus Drug News, Inspec®, International Pharmaceutical Abstracts, Jane's Defense & Aerospace News, King's Fund, KOSMET: Cosmetic Science, Lancet Titles, Mechanical & Transportation Engineering Abstracts, MEDLINE®, Meteorological & Geoastrophysical Abstracts, Morressier Life Science Conference Abstracts and Posters, New England Journal of Medicine, Northern Light Life Sciences Conference Abstracts, NTIS: National Technical Information Service, Oceanic Abstracts, PAIS International, Paperbase, PAPERCHEM, ProQuest Advanced Tech & Aerospace Professional, ProQuest Biological & Health Science Professional, ProQuest Dissertations and Theses Professional, ProQuest Environmental Science Professional, ProQuest Materials Research Professional, ProQuest Newsstand Professional, ProQuest Technology Research Professional, Prous Science Daily Essentials, Prous Science Drug Data Report, Prous Science Drugs Of The Future™, Publicly Available Content, Registry of Toxic Effects of Chemical Substances (RTECS®), SciSearch®: a Cited Reference Science Database, Social SciSearch®, ToxFile®, Transport Research International Documentation, TULSA™ (Petroleum Abstracts), UBM Computer Full Text, Weldasearch®, Zoological Record

Set#	Searched for	Results
S1	(plural$8 near/5 cloud AND (audit$4 OR collect$6 near/10 data) near/10 (entities OR components OR devices OR nodes OR machines) AND convert$5 near/6 (generic OR raw OR basic) near/2 representation AND heterogeneous)	0°
S2	(plural$8 near/5 cloud AND convert$5 near/6 (generic OR raw OR basic OR elementary) near/2 representation AND heterogeneous)	0°
S3	(((first near/2 clouds AND second near/2 cloud) OR (plural$4 near/5 clouds)) AND convert$5 near/6 (generic OR raw OR basic OR elementary) near/2 representation AND heterogeneous)	0°
S4	(((first near/2 clouds AND second near/2 cloud) OR (plural$4 near/5 clouds)) AND convert$5 near/6 (generic OR raw OR basic OR elementary) near/2 representation)	0°
S5	((clouds OR cloud near/2 networks) AND (convert$5 OR compress$5 OR encod$5) near/6 (entities OR components	9°

	OR devices OR nodes OR machines) near/10 (generic OR raw OR basic OR elementary) near/2 representation)	
S6	(topology OR graph OR model) near/3 network AND (present$4 OR display$4) near/5 (topology OR graph OR model) near/5 (user OR client)	5040*
S7	(topology OR graph OR model) near/3 network AND (present$4 OR display$4) near/5 (topology OR graph OR model) near/5 (user OR client) AND convert$5 near/6 (generic OR raw OR basic OR elementary) near/2 representation	1°

* Duplicates are removed from the search, but included in the result count.

° Duplicates are removed from the search and from the result count.

Contact ProQuest
Copyright © 2023 ProQuest LLC. All rights reserved. - **Terms and Conditions**

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	201700	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:27 PM
L2	60	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND genericiz$5	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:42 PM
L3	0	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND genericiz$5 AND (collect$4 OR gather$4 OR retriev$4) near10 characteristics AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:46 PM
L4	0	genericiz$5 AND (collect$4 OR gather$4 OR retriev$4) near10 characteristics AND	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU,	OR	ON	ON	2021/12/16 01:52 PM

		generat$4 near10 network near4 graph	CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L5	1	genericiz$5 AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:53 PM
L6	0	genericiz$5 near5 (collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:54 PM
L7	7	genericiz$5 near5 (collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN,	OR	ON	ON	2021/12/16 01:54 PM

			WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L8	35	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:58 PM
L9	6	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph near10 relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:03 PM
L10	2	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 (network near6 graph OR topology) near10 relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:04 PM
L11	81694	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2021/12/16 02:07 PM

			EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L12	4673	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:07 PM
L13	1967	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional AND stor$4 near6(graph OR model)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:08 PM
L14	1794	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO;	OR	ON	ON	2021/12/16 02:09 PM

			JPO; DERWENT; IBM_TDB)				
L15	327	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:09 PM
L16	143	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR generic)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:10 PM
L17	221	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:10 PM
L18	153	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:11 PM

		dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw))					
L19	143	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw)) AND network near4 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:22 PM
L20	116	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw)) AND network near4 (device OR node OR entity OR module) AND (device OR node OR entity OR module) near3 (class OR type OR category OR configuration)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:24 PM
L21	164301	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) topolog$5 near5 network	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:31 PM
L22	1330	generat$4 near10	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16

		(network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 network					08:31 PM
L23	104489	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 networkand multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:33 PM
L24	110	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 network AND multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:33 PM
L25	532	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:38 PM
L26	422	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:38 PM

		OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24					
L27	230	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:39 PM
L28	112	topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM
L29	3986517	network near6topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM
L30	57	network near6 topology AND (discover$4 OR generat$4) near10	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM

		(network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24					
L31	1254	network near6 topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:54 PM
L32	18	network near6 topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:55 PM
L33	8	network near6 topology AND network near6 discovery AND (generat$4) near6 (graph OR model OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:00 PM

		node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)					
L34	10466718	(creat$5 OR generat$5)network near6 topology AND network near6 discovery AND (graph OR model OR topology) near6 network AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:03 PM
L35	0	(creat$5 OR generat$5) near5 network near6 topology AND network near6 discovery AND (graph OR model OR topology) near6 network AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:03 PM
L36	2194	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:05 PM
L37	179	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:06 PM

		model) near5 (user OR client) AND (multidimensional OR multi-dimensional)					
L39	156	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client) AND (multidimensional OR multi-dimensional) AND (collect$4 OR gather$4 OR receiv$5 OR retriev$4) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:13 PM
L40	165	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client) AND (multidimensional OR multi-dimensional) AND (collect$4 OR gather$4 OR receiv$5 OR retriev$4 OR captur$4) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:14 PM
L42	17228	(model) WITH vertex WITH (entity OR device OR node OR module)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/17 12:24 AM
L43	398	(model) WITH vertex WITH network near2 (entity OR device OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2021/12/17 12:24 AM

		node OR module)	CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L44	39	(model) WITH vertex WITH network near2 (entity OR device OR node OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/17 12:25 AM
L45	2	"20180024981" "20200322227"	(US-PGPUB)	OR	ON	ON	2022/04/01 12:08 PM
L46	2	"20190258973" "20070147269"	(US-PGPUB)	OR	ON	ON	2022/04/01 12:10 PM
L47	670	generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:23 PM
L48	13	generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:25 PM
L49	3	generat$4 near5 network near5 topology	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/01 12:25 PM

		AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)					
L50	121	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:53 PM
L51	0	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:53 PM
L52	25	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND security near4 protocol	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2022/04/01 02:33 PM

			IBM_TDB)				
L53	2	provisioning AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:47 PM
L54	1638	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:49 PM
L55	221	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:50 PM
L56	177	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule AND	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS,	OR	ON	ON	2022/04/01 02:50 PM

		topology	IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L57	159	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule AND topology	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/01 02:50 PM
L58	20	generat$5 WITH generic near3 network near3 (entities OR devices OR components)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/08/04 01:25 PM
L59	0	(neutral OR general OR generic OR basic) near4 representation near10 network near2 (entitites OR nodes OR components OR devices) AND plurality near5 cloud	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 01:41 PM
L60	4	generat$5 near10 (graph OR model) AND (neutral OR general OR generic OR basic) near4 representation AND network near2 (entitites OR nodes OR components OR devices) WITH graph AND plurality near5 cloud	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 01:42 PM
L62	24	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 04:58 PM
L63	24	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 04:59 PM

		(generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain)					
L64	22	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model WITH network	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:50 PM
L65	132	(generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model WITH network	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:50 PM
L66	110	(generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model WITH network NOT L64	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:51 PM
L67	38	(generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model WITH network NOT L64 AND clouds	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:57 PM
L68	882	(basic OR generic OR general OR simple) near2 representation near4 network	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 02:33 PM
L69	116	(basic OR generic OR	(US-PGPUB; USPAT;	OR	ON	ON	2023/03/01

		general OR simple) near2 representation near4 network AND network near4 cloud	EPO; JPO; DERWENT; IBM_TDB)				02:33 PM
L70	2	(basic OR generic OR general OR simple) near2 representation near4 network AND network near4 cloud AND (tear-down OR tear near1 down OR reduc$4 OR break-down OR break$4 near1 down) WITH (basic OR generic OR general OR simple)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 02:34 PM
L71	441	(basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 02:54 PM
L72	36	(basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4) near10 (basic OR generic OR general OR simple)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 02:55 PM
L73	35	(basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4) near10 (basic OR generic OR general OR simple) AND (basic OR generic OR general OR simple) AND (devices OR entities OR nodes)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 03:07 PM
L74	49	(basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud AND	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 03:09 PM

		(modif$6 OR adjust$5 OR reduc$4 OR normaliz$6) near10 (basic OR generic OR general OR simple) AND (basic OR generic OR general OR simple) AND (devices OR entities OR nodes)					
L75	14	(basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4 OR normaliz$6) near10 (basic OR generic OR general OR simple) AND (basic OR generic OR general OR simple) AND (devices OR entities OR nodes) NOT L73	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 03:09 PM
L76	1	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4) near10 (basic OR generic OR general OR simple) AND (basic OR generic OR general OR simple) AND (devices OR entities OR nodes)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 03:10 PM
L77	140	(basic OR generic OR general OR simple OR plain OR native OR raw) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4 OR chang$4 OR conver$6) near10 (basic OR	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 06:42 PM

		generic OR general OR simple OR plain OR native OR raw)					
L78	72	(basic OR generic OR general OR simple OR plain OR native OR raw) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4 OR chang$4 OR conver$6) near10 (basic OR generic OR general OR simple OR plain OR native OR raw) AND (devices OR entities OR nodes) AND generat$5 near10 (model OR graph)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 06:43 PM
L79	764	((first near2 cloud AND second near2 cloud) OR (plural$5 near3 (cloud OR providers))) AND cloud near2 provider AND (devices OR entities OR components OR swithces OR routers OR gateways OR servers) near5 network AND generat$5 near10 (graph OR topolog$5)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/11 07:38 PM
L80	59	((first near2 cloud AND second near2 cloud) OR (plural$5 near3 (cloud OR providers))) AND cloud near2 provider AND (devices OR entities OR components OR swithces OR routers OR gateways OR servers) near5 network AND generat$5 near10 (graph OR topolog$5) AND multi-dimension$3	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/11 07:38 PM
L81	27	((first near2 cloud AND second near2 cloud) OR (plural$5 near3 (cloud OR providers))) AND cloud near2 provider AND (devices OR entities OR	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/11 07:39 PM

		components OR swithces OR routers OR gateways OR servers) near5 network AND generat$5 near10 (graph OR topolog$5) AND multi-dimension$3 AND representation AND stor$5 near5 graph					
L82	682	((first near2 cloud AND second near2 cloud) OR (plural$5 near3 (cloud OR providers))) AND cloud near2 provider AND (devices OR entities OR components OR swithces OR routers OR gateways OR servers) near5 network AND generat$5 near10 (graph OR topolog$5) AND (gui OR user near2 interface)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/11 07:42 PM
L83	125	((first near2 cloud AND second near2 cloud) OR (plural$5 near3 (cloud OR providers))) AND cloud near2 provider AND (devices OR entities OR components OR swithces OR routers OR gateways OR servers) near5 network AND generat$5 near10 (graph OR topolog$5) AND (gui OR user near2 interface) AND stor$5 near5 graph	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/11 07:42 PM
L84	118	((first near2 cloud AND second near2 cloud) OR (plural$5 near3 (cloud OR providers))) AND cloud near2 provider AND (devices OR entities OR components OR swithces OR routers OR gateways OR servers) near5 network AND generat$5 near5 (graph OR topolog$5) AND (gui OR user near2 interface) AND stor$5 near5 graph	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/11 07:44 PM

L85	35	((first near2 cloud AND second near2 cloud) OR (plural$5 near3 (cloud OR providers))) AND cloud near2 provider AND (devices OR entities OR components OR swithces OR routers OR gateways OR servers) near5 network AND generat$5 near5 (graph) AND (topolog$5) AND (gui OR user near2 interface) AND stor$5 near5 graph	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/11 07:44 PM
L86	29	((first near2 cloud AND second near2 cloud) OR (plural$5 near3 (cloud OR providers))) AND cloud near2 provider AND (devices OR entities OR components OR swithces OR routers OR gateways OR servers) near5 network AND generat$5 near5 (graph) AND (topolog$5) AND (gui OR user near2 interface) AND stor$5 near5 graph AND (normaliz$6 OR generic$6)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/11 07:47 PM
L87	21	((first near2 cloud AND second near2 cloud) OR (plural$5 near3 (cloud OR providers))) AND cloud near2 provider AND (devices OR entities OR components OR swithces OR routers OR gateways OR servers) near5 network AND generat$5 near5 (graph) AND (topolog$5) AND (gui OR user near2 interface) AND stor$5 near5 graph AND (normaliz$6 OR generic$6) AND role AND propert$4	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/11 08:07 PM
L88	28394	cloud AND (devices OR	(US-PGPUB; USPAT;	OR	ON	ON	2023/10/11

		entities OR components OR swithces OR routers OR gateways OR servers OR appliances) near5 network AND generat$5 near10 (graph OR topolog$5) AND (gui OR user near2 interface)	EPO; JPO; DERWENT; IBM_TDB)				08:17 PM
L89	5435	(collect$$ OR gather$4 OR retriev$4) near10 (propert$4 OR state) AND cloud AND (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) near5 network AND generat$5 near10 (graph OR topolog$5) AND (gui OR user near2 interface)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/11 08:19 PM
L90	1615	(collect$$ OR gather$4 OR retriev$4) near10 (propert$4 OR state) near7 (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) AND cloud AND (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) near5 network AND generat$5 near10 (graph OR topolog$5) AND (gui OR user near2 interface)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 12:42 PM
L91	76	(collect$$ OR gather$4 OR retriev$4) near10 (propert$4 OR state) near7 (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) AND cloud AND (devices OR entities OR components OR switches OR routers OR gateways	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 12:43 PM

		OR servers OR appliances) near5 network AND generat$5 near10 (graph OR topolog$5) AND (gui OR user near2 interface) AND network near2 entity AND network near2 propert$3					
L92	52	(collect$$ OR gather$4 OR retriev$4) near10 (propert$4 OR state) near7 (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) AND cloud AND (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) near5 network AND generat$5 near10 (graph OR topolog$5) AND (gui OR user near2 interface) AND network near2 entity AND network near2 propert$3 AND graph WITH relationship	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 12:45 PM
L93	75	(collect$$ OR gather$4 OR retriev$4) near10 (propert$4 OR state) near7 (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) AND cloud AND (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) near5 network AND generat$5 near10 (graph OR topolog$5) AND (gui OR user near2 interface) AND network near2 propert$3 AND graph WITH relationship	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 12:45 PM

L94	23	(collect$$ OR gather$4 OR retriev$4) near10 (propert$4 OR state) near7 (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) AND cloud AND (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) near5 network AND generat$5 near10 (graph OR topolog$5) AND (gui OR user near2 interface) AND network near2 propert$3 AND graph WITH relationship NOT L92	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 12:45 PM
L95	23	(collect$$ OR gather$4 OR retriev$4) near10 (propert$4 OR state) near7 (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) AND cloud AND (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) near5 network AND generat$5 near10 (graph OR topolog$5) AND (gui OR user near2 interface) AND network near2 propert$3 AND graph WITH relationship NOT L92 AND cloud	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 12:46 PM
L96	30	(collect$$ OR gather$4 OR retriev$4) near15 (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) AND clouds AND generat$5 near10 (graph OR topolog$5	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 12:51 PM

		OR model) near10 network near3(device OR entities OR entity OR components OR switches OR routers OR gateways OR servers OR appliances) AND (gui OR user near2 interface) AND network near2 propert$3 AND graph WITH relationship NOT L92					
L97	13	(collect$$ OR gather$4 OR retriev$4) near15 (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) AND clouds AND generat$5 near10 (graph OR topolog$5 OR model) near10 network near3(device OR entities OR entity OR components OR switches OR routers OR gateways OR servers OR appliances) AND (gui OR user near2 interface) AND network near2 propert$3 AND graph WITH relationship NOT L92 NOT 95	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 12:51 PM
L98	9	((US-20160212167-A1 OR US-20210342685-A1 OR US-20210168016-A1 OR US-20170279698-A1 OR US-20170310552-A1 OR US-20210327108-A1).did. AND PGPB.dbnm.) OR ((US-9137110-B1 OR US-10992543-B1 OR US-11086709-B1).did. AND USPT.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:01 PM
L99	9	((US-20160212167-A1 OR US-20210342685-A1 OR US-20210168016-A1 OR US-20170279698-A1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2023/10/12 01:03 PM

		OR US-20170310552-A1 OR US-20210327108-A1).did. AND PGPB.dbnm.) OR ((US-9137110-B1 OR US-10992543-B1 OR US-11086709-B1).did. AND USPT.dbnm.) AND cloud AND (graph OR model) AND network near2 (entities OR components OR devices OR nodes OR machines)	EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L100	9	((US-20160212167-A1 OR US-20210342685-A1 OR US-20210168016-A1 OR US-20170279698-A1 OR US-20170310552-A1 OR US-20210327108-A1).did. AND PGPB.dbnm.) OR ((US-9137110-B1 OR US-10992543-B1 OR US-11086709-B1).did. AND USPT.dbnm.) AND cloud AND (graph OR model) AND network near2 (entities OR components OR devices OR nodes OR machines) AND (collect$4 OR gather$5 OR retriev$5 OR mining)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:03 PM
L101	17	(collect$$ OR gather$4 OR retriev$4) near15 (devices OR entities OR components OR switches OR routers OR gateways OR servers OR appliances) AND clouds AND generat$5 near10 (graph OR topolog$5 OR model) near10 network near3(device OR entities OR entity OR components OR switches OR routers OR gateways OR servers OR appliances) AND (gui OR user near2 interface) AND network near2 propert$3 AND graph	(US-PGPUB)	OR	ON	ON	2023/10/12 01:07 PM

		WITH relationship NOT L92					
L102	10	((US-20160212167-A1 OR US-20210342685-A1 OR US-20210168016-A1 OR US-20170279698-A1 OR US-20170310552-A1 OR US-20210327108-A1 OR US-20190182119-A1).did. AND PGPB.dbnm.) OR ((US-9137110-B1 OR US-10992543-B1 OR US-11086709-B1).did. AND USPT.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:08 PM
L103	10	((US-20160212167-A1 OR US-20210342685-A1 OR US-20210168016-A1 OR US-20170279698-A1 OR US-20170310552-A1 OR US-20210327108-A1 OR US-20190182119-A1).did. AND PGPB.dbnm.) OR ((US-9137110-B1 OR US-10992543-B1 OR US-11086709-B1).did. AND USPT.dbnm.) AND cloud AND (graph OR model) AND network near2 (entities OR components OR devices OR nodes OR machines) AND (collect$4 OR gather$5 OR retriev$5 OR mining)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:08 PM
L104	18462	plural$8 near5 cloud AND collect$6 near10 data near10 (devices OR components OR nodes OR machines OR computers)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2023/10/12 01:44 PM

			IBM_TDB)				
L105	21	plural$8 near5 cloud AND (audit$4 OR collect$6 near10 data) near10 (entities OR components OR devices OR nodes OR machines) AND convert$5 near6 (generic OR raw OR basic) near2 representation	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:45 PM
L106	18	plural$8 near5 cloud AND (audit$4 OR collect$6 near10 data) near10 (entities OR components OR devices OR nodes OR machines) AND convert$5 near6 (generic OR raw OR basic) near2 representation AND heterogeneous	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:45 PM
L107	29	plural$8 near5 cloud AND convert$5 near6 (generic OR raw OR basic) near2 representation AND heterogeneous	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:46 PM
L108	29	plural$8 near5 cloud AND convert$5 near6 (generic OR raw OR basic OR elementary) near2 representation AND heterogeneous	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS,	OR	ON	ON	2023/10/12 01:47 PM

			IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L109	64	clouds AND convert$5 near6 (generic OR raw OR basic OR elementary) near2 representation AND heterogeneous	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:47 PM
L110	29	((first near2 clouds AND second near2 cloud) OR (plural$4 near5 clouds)) AND convert$5 near6 (generic OR raw OR basic OR elementary) near2 representation AND heterogeneous	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:49 PM
L111	106	clouds AND (convert$5 OR compress$5 OR encod$5) near6 (generic OR raw OR basic OR elementary) near2 representation AND heterogeneous	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:50 PM

L112	437	clouds AND (convert$5 OR compress$5 OR encod$5) near6 (generic OR raw OR basic OR elementary) near2 representation	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:51 PM
L113	44	((first near2 clouds AND second near2 cloud) OR (plural$4 near5 clouds)) AND convert$5 near6 (generic OR raw OR basic OR elementary) near2 representation	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:51 PM
L114	437	(clouds OR cloud near2 networks) AND (convert$5 OR compress$5 OR encod$5) near6 (generic OR raw OR basic OR elementary) near2 representation	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/12 01:52 PM
L115	93	(clouds OR cloud near2 networks) AND (convert$5 OR compress$5 OR encod$5) near6 (entities OR components OR devices OR nodes OR machines) near10	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL,	OR	ON	ON	2023/10/12 01:53 PM

		(generic OR raw OR basic OR elementary) near2 representation	NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L116	360	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/19 04:49 PM
L117	2	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND plural$8 near5 cloud AND convert$5 near6 (generic OR raw OR basic OR elementary) near2 representation AND heterogeneous	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/19 04:50 PM
L118	2	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND clouds AND (convert$5 OR compress$5 OR encod$5) near6 (generic OR raw OR basic OR elementary) near2 representation AND heterogeneous	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/10/19 04:51 PM
L119	3	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU,	OR	ON	ON	2023/10/19 04:51 PM

		(clouds OR cloud near2 networks) AND (convert$5 OR compress$5 OR encod$5) near6 (entities OR components OR devices OR nodes OR machines) near10 (generic OR raw OR basic OR elementary) near2 representation	CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N1	0	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND plural$8 near5 cloud AND (audit$4 OR collect$6 near10 data) near10 (entities OR components OR devices OR nodes OR machines) AND convert$5 near6 (generic OR raw OR basic) near2 representation	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/19 04:49 PM
N2	2	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND plural$8 near5 cloud AND convert$5 near6 (generic OR raw OR basic) near2 representation AND heterogeneous	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/19 04:50 PM
N3	2	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND plural$8 near5 cloud AND convert$5 near6 (generic OR raw OR basic OR elementary) near2 representation AND heterogeneous	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/19 04:50 PM
N4	2	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/19 04:50 PM

		clouds AND convert$5 near6 (generic OR raw OR basic OR elementary) near2 representation AND heterogeneous					
N5	2	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND ((first near2 clouds AND second near2 cloud) OR (plural$4 near5 clouds)) AND convert$5 near6 (generic OR raw OR basic OR elementary) near2 representation AND heterogeneous	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/19 04:51 PM
N6	2	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND clouds AND (convert$5 OR compress$5 OR encod$5) near6 (generic OR raw OR basic OR elementary) near2 representation AND heterogeneous	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/19 04:51 PM
N7	0	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (clouds OR cloud near2 networks) AND (convert$5 OR compress$5 OR encod$5) near6 (entities OR components OR devices OR nodes OR machines) near10 (generic OR raw OR basic OR elementary) near2 representation	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/19 04:51 PM

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	**09/07/2023 05:13:55 PM ET**	**WZIO P1933**

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Alyce Kavanaugh
PATENT CENTER #	62756332	FILING DATE	01/28/2021
CUSTOMER #	122066	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Eugene Rosenthal

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
WZIO_P1933_Appeal_Brief_20230907.pdf	26	Appeal Brief Filed	279 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
WZIO_P1933_Appeal_Brief_20230907.pdf	FD24E65A40EA9719333EFED8853BFE423BDFC892F2CB43553 14561C36BF9397551790E0ED74DBD6B4C9CD2C43D21B340D2 C811CB6B97D2DA446807676E6C546B

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	**09/07/2023 05:13:55 PM ET**	**WZIO P1933**

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Alyce Kavanaugh
PATENT CENTER #	62756332	AUTHORIZED BY	Eugene Rosenthal
CUSTOMER #	122066	FILING DATE	01/28/2021
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 3356	**E202397H20378209**	**Alyce Kavanaugh**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1251	EXTENSION FOR RESPONSE WITHIN FIRST MONTH	220.00	1	220.00
			TOTAL AMOUNT:	**$220.00**

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 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
BEFORE THE PATENT TRIAL AND APPEAL BOARD

Appellants:	Daniel Hershko Shemesh et al.
Serial No:	17/161,190
Filed:	January 28, 2021
Docket No.:	WZIO P1933
Examiner:	Won, Michael Young
Art Unit:	2443
Confirmation No.:	6419

APPEAL BRIEF
On Appeal from Group Art Unit 2443

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

Sir:

Appellants hereby petition for a one (1) month extension-of-time, extending the period for filing an Appeal Brief, the required fee being paid through the EFS.

This Appeal Brief is submitted in support of the Notice of Appeal filed on June 7, 2023 and in response to the final Office Action of March 7, 2023.

TABLE OF CONTENTS

I. REAL PARTY IN INTEREST 3

II. RELATED APPEALS AND INTERFERENCES..... 3

III. SUMMARY OF CLAIMED SUBJECT MATTER..... 4

IV. ARGUMENT..... 7

V. CLAIMS APPENDIX..... 20

I. REAL PARTY IN INTEREST

The real party in interest of the above-identified application is WIZ, INC., the assignee of record, whose assignment is recorded in the USPTO as of 01/28/2021 on five (5) pages beginning at Reel 055067, Frame 0957.

II. RELATED APPEALS AND INTERFERENCES

Appellants are not aware of any pending appeals, judicial proceedings, or interferences which may be related to, directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. SUMMARY OF CLAIMED SUBJECT MATTER[1]

The claimed invention, as recited in claim 1, is directed to a method for generation of unified graph models for network entities (*Title; FIGs. 1A, 1B, 2, 4; page 3, paragraphs 8, 9; page 4, paragraph 10; page 5, paragraph 21 to page 19, paragraph 65; p. 23, paragraph 76 to page 24, paragraph 78*), comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms (*FIGs. 1A, 1B, 2; page 3, paragraphs 8, 9; page 4, paragraph 10; page 5, paragraph 21 to page 9, paragraph 31; page 11, paragraph 38 to page 13, paragraph 45*);

genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms; (*FIGs. 2, 4; page 3, paragraphs 8, 9; page 4, paragraph 10; page 13, paragraph 45 to page 16, paragraph 56; page 23, paragraph 76 to page 24, paragraph 78*);

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the generic network entities of the plurality of network entities (*FIGs. 1A, 2; page 3, paragraphs 8, 9; page 4, paragraph 10; page 9, paragraphs 31-33; page 10, paragraphs 35, 36; page 17, paragraph 57 to page 19, paragraph 64*); and

---

[1] It should be explicitly noted that it is not intended that the currently claimed or described embodiments be limited to operation within the illustrative embodiments described below beyond what is required by the claim language. Further description of the illustrative embodiments are provided indicating portions of the claims which cover the illustrative embodiments merely for compliance with the requirements of this appeal without intending to read any further interpreted limitations into the claims as presented.

storing the generated network graph (*FIG. 1A, 2; page 3, paragraphs 8, 9; page 4, paragraph 10; page 10, paragraph 34 to page 11, paragraph 37; page 19, paragraph 65*).

The claimed invention, as recited in claim 16, is directed to a non-transitory computer readable medium having stored thereon instructions for causing a processing circuitry to execute a process for generation of unified graph models for network entities (*Title; FIGs. 1A, 1B, 2, 4; page 3, paragraphs 8, 9; page 4, paragraph 10; page 5, paragraph 21 to page 19, paragraph 65; p. 23, paragraph 76 to page 24, paragraph 78*), the process comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms(*FIGs. 2, 4; page 3, paragraphs 8, 9; page 4, paragraph 10; page 13, paragraph 45 to page 16, paragraph 56; page 23, paragraph 76 to page 24, paragraph 78*);

genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms (*FIGs. 2, 4; page 3, paragraphs 8, 9; page 4, paragraph 10; page 13, paragraph 45 to page 16, paragraph 56; page 23, paragraph 76 to page 24, paragraph 78*);

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the network entities of the plurality of network entities; and

storing the generated network graph (*FIG. 1A, 2; page 3, paragraphs 8, 9; page 4, paragraph 10; page 10, paragraph 34 to page 11, paragraph 37; page 19, paragraph 65*).

The claimed invention, as recited in claim 17, is directed to a system for generating unified graph models for network entities (*Title; FIGs. 1A, 1B, 2, 4, 6; page 3, paragraphs 8, 9; page 4, paragraph 10; page 5, paragraph 21 to page 19, paragraph 65; p. 23, paragraph 76 to page 24, paragraph 78; page 30, paragraph 95 to page 31, paragraph 103*), comprising:

a processing circuitry (*FIG. 6; page 30, paragraphs 95, 97-99; page 31, paragraph 103*); and

a memory, the memory containing instructions that, when executed by the processing circuitry (*FIG. 6; page 30, paragraphs 95, 96; page 31, paragraph 103*), configure the system to:

collect, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms (*FIGs. 2, 4; page 3, paragraphs 8, 9; page 4, paragraph 10; page 13, paragraph 45 to page 16, paragraph 56; page 23, paragraph 76 to page 24, paragraph 78*);

genericize each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms (*FIGs. 2, 4; page 3, paragraphs 8, 9; page 4, paragraph 10; page 13, paragraph 45 to page 16, paragraph 56; page 23, paragraph 76 to page 24, paragraph 78*);

generate at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and

store the generated network graph (*FIG. 1A, 2; page 3, paragraphs 8, 9; page 4, paragraph 10; page 10, paragraph 34 to page 11, paragraph 37; page 19, paragraph 65*).

IV. ARGUMENT

Appellants respectfully traverse the rejections in accordance with the detailed arguments set forth below.

It is understood and expected that each independent and each dependent claim must be interpreted according to its own specific recitation of limitations.

Appellants understand that each rejection for obviousness is based on a combination of references. Any argument below citing a single reference is done for clarity only and should not be considered as arguing the reference individually. Any discussion should be considered as arguing the combination of references.

Claims 1, 16, and 17 are independent claims of different claim types and interpretations.

A. Claims 1-7, 11-23, and 27-31 are not properly rejected under 35 USC 103 as being anticipated by United States Patent Publication No. 2019/0258973 of Prabhu et al. (hereinafter "Prabhu") in view of United States Patent No. 5,819,028 issued to Manghirmalani et al. (hereinafter "Manghirmalani").

Independent claim 1 recites (emphasis added):

> A method for generation of unified graph models for network entities, comprising:
>
> collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;
>
> genericizing each of the network entities based on the respective collected network entity data to *generate a plurality of generic network entities*, wherein *a generic network entity includes a generic representation of respective network entities from* ***different cloud computing platforms of the plurality of cloud computing platforms***;
>
> generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing *a representation of the plurality of generic network entities and relations between the generic network entities of the plurality of network entities*; and
>
> storing the generated network graph.

As an initial comment, Prabhu is **not** an appropriate reference on which to base a rejection of claims that are directed to network entities that are deployed in a plurality of cloud computing platforms. Prabhu is directed to **business** entity modeling, e.g. as

indicated in at least its paragraphs 1, 21-25, 28-30, 40, 45-52, and generally throughout the entirety of Prabhu. Being directed to **business** modeling, Prabhu simply has **nothing** to do with unified graph models for network entities and so it is **unrelated** to generating at least a network graph that provides *a representation of the plurality of generic network entities and relations between the generic network entities of the plurality of network entities*

In addition, it should be appreciated that, while not dispositive, a keyword search of Prabhu for "generic" did **not** return any hits, indicating that Prabhu has **nothing** to do with genericizing anything, and certainly **not** network entities.

Turning to the particulars of the rejection, for the collecting claim element the Examiner is conflating the system on which the methods of Prabhu are hosted, i.e., run, e.g., computing system 100 or system 200 of Prabhu, and a network and network entities for which data is collected as called for in the claim. Paragraphs 30-38 of Prabhu are describing the hardware devices and environment for executing the modeling of Prabhu. But these hardware elements are **not** themselves the subject of any modeling and **no** entity data as called for in the claim is collected for them. Note that paragraph 33 cited by the Examiner is simply part of the above description of the hardware environment. While paragraph 30 indicates that endpoints may access the business models and integration tools over a network, again, such is **unrelated** to collecting network entity data for each network entity as called for in the claim. Further description of the hardware environment in which the embodiments of Prabhu may be implemented are explained in paragraphs 103-113 of Prabhu, and again, there is **no** teaching or suggestion to collect information about any such hardware in the environment.

One further point to consider is with regard to entities and models, etc. These are all **business** elements, **not** network entities, notwithstanding that the word "**business**" is **not** always recited in front of such terms, as such can easily be understood from the context. Furthermore, while Prabhu mentions a few instances of computational entities, these are **not** defined in Prabhu but appear to be the results of calculations on one or more of the business entities rather than any network entity and certainly there is **no** suggestion in that such computational entities are deployed in a plurality of cloud computing platforms. See, for example, Prabhu, paragraph 51. Note that FIG. 4 of

Prabhu defines various dependency models 225, one of which is computational dependencies. It seems that application of computational dependencies results in a computational entity.

Thus, this claim element is **lacking** from Prabhu and **hence** is lacking from the combination as a whole.

Given that there is **no** collection of the required data on which the rest of the method operates, Prabhu can teach **none** of the remaining steps of the method, especially **not** the genericizing step which directly depends on the collected data. Also, as the graph must provide *a representation of the plurality of generic network entities* and Prabhu has **no** information about network entities, the graph as called for in the claim can**not** be generated, and of course, likewise a graph that does **not** exist can**not** be stored as such is called for in the claim.

Thus, these claim elements are likewise **lacking** from the combination as a whole, as Prabhu is cited as the sole reference for teaching these claim elements.

Turning more specifically to the genericizing step of the claim, for the claim language only of "genericizing each of the network entities based on the respective collected network entity data" the Examiner cites paragraph 42 of Prabhu, and in particular the language thereto of:

> The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data
>
> Paragraph 42 of Prabhu states in its entirety:
>
> > In some implementations, a data access and command interface 250 can be provided that defines access to entities, relationships, and fact data and provides seamless traversal across related entities (for potentially multiple different types of relationships). The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data. In some cases, a data access and command interface 250 can be instantiated with a specialized or other data access language, such as a language optimized for querying and computations, such as the integrated business planning language (IBPL), among other potential examples.

What this appears to be saying is that entities can be added, modified, or deleted by a person using data access and command interface 250, e.g., at one of endpoint user devices of FIG. 1. However, there is **no** teaching or suggestion to genericize any entity, even if, *arguendo*, such entities were network entities as called for in the claim, which they are **not**, as explained hereinabove. In addition, these entities are business entities, **not** network entities as called for in the claim. Thus, there is **no** genericizing of any network entities taught or suggested in Prabhu.

In view of the foregoing, the contribution of Prabhu to the combination in regard to the genericizing claim is **lacking** from Prabhu and thus also **lacking** from the combination as a whole.

Turning to the graphing step, Prabhu can**not** graph that which is does **not** have, namely generic network entities. Furthermore, what is graphed in Prabhu are relationships among **business** entities, which are the entities of Prabhu, as explained hereinabove. In addition, "entity graph" seems to appear in Prabhu only in its abstract and claims. There does **not** appear to be any teaching or suggestion how to produce any such graphs in the specification. Thus, Prabhu would appear to be **non**-enabling with regard to its own claims, and most certainly with regard to the instant claims.

Thus, whatever graphing is taught or suggested by Prabhu is simply **not** the specific graphing called for in the claim, and hence this claim element is **lacking** from the combination as a whole.

Naturally, since Prabhu does **not** generate the specific graph called for in the claim, Prabhu can**not** teach to store such a specific graph, and hence the storing step as well is **lacking** from the combination as a whole.

Thus, actually Prabhu teaches **none** of the claim elements for which it is cited by the Examiner.

Turning to Manghirmalani, the Examiner states (emphasis added):

> Prabhu does not explicitly the network entities are generic network entities, wherein a generic network entity includes a generic representation of respective network entities.
>
> Manghirmalani teaches generic network entities, wherein a generic network entity includes a generic representation of respective network entities (see Manghirmalani, col.1, lines 9-12: "The present invention relates to the field of network entities and domains; more specifically, to the

> generation and display of certain generic objects of a network entity or domain"; col.6, lines 9-16: "This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format. In the currently preferred embodiment, generic objects include the health, load, error, and performance of the network. In addition, these objects can also be provided to the operator for individual devices on the network"; and col.9, lines 19-21: "The present invention addresses this problem by generating a generic object, called the "load" for the network/device").

Looking more closely at this and at Manghirmalani as a whole, it is clear that the generic objects of Manghirmalani are **not** the generic network entities called for in the claim. More specifically, the claim requires first that the *generic network entity includes a generic representation of respective network entities*. Manghirmalani does **not** teach or suggest that its generic objects are *a generic representation of respective network entities* as called for in the claim. Rather the generic objects of Manghirmalani are describing the operational status of the network and its objects, which is something very **different**. Basically, the generic objects of Manghirmalani tell one if the network is healthy, what load the network is currently serving, is the network producing errors, and what is the network's performance. In other words, there is **no** representation of any object, only an indication of its level of functioning.

More specifically, the health generic object is an overall numerical representation of how well the network is functioning. See Manghirmalani, col. 6, lines 18-44. Similarly, the load generic object uses information such as the total number of octets received, time interval, total frames received, average frame size, multicast frames received, broadcast frames received, etc., which are converted according to a formula to a range (e.g., 0 to 10) which denotes the "load'. See Manghirmalani, col. 9, lines 19-27. Furthermore, per Manghirmalani, col. 9, lines 57-65, the generic object "error" looks at items such as alignment, frame check sequence (FCS), runt, line, burst, internal, etc. errors are converted according to a formula to a generic object, "error".

In addition, the representation called for in the claim must be a representation of *network entities from* ***different cloud computing platforms of the plurality of cloud computing platforms***. However, Manghirmalani does **not** mention the word "cloud" based on a keyword search thereof, **nor** is there any suggestion of ***different cloud***

computing platforms. Indeed, Manghirmalani appears to be too old to suggest cloud computing environments, let alone multiple cloud environments. As such, Manghirmalani is simply looking at a single network and is also looking at a much lower level than cloud computing.

Furthermore, the generic objects of Manghirmalani are **unsuitable** to be graphed to produce network graph that is a multi-dimensional data structure providing *a representation of the plurality of generic network entities and relations between the generic network entities of the plurality of network entities* as called for in the claim because only the functioning of the network is described by the generic elements of Manghirmalani. Indeed, there is **no** graphing suggested in Manghirmalani, just to display the information of the generic objects on the CRT, e.g., as a dial meter, graph meter, or digital meter. Note that a graph meter is **not** a graph as called for in the instant claim. For an illustration of a graph meter, see Manghirmalani, FIG. 4.

In other words, as Appellants explained in their prior response, Manghirmalani discloses reducing the data gathered by the agents into a set of common or generic objects. As explained above, these common or generic objects are then displayed to the operator in an easy-to-understand format. The generic objects include the health, load, error, and performance of the network. Manghirmalani further explains that the "health" of a network is an overall numerical representation of how well the network is functioning. Error object is another generic object for relaying information to the operator is the network "error." Other examples of "generic objects" provided by Manghirmalani relate to the status of network devices, such as performance and load. As such, the generic objects of Manghirmalani do **not** provide generic representations of network devices of Manghirmalani and, specifically, *of network devices in different clouds*. To support this argument, Appellants points to FIG. 11 of Manghirmalani reproduced hereinbelow:

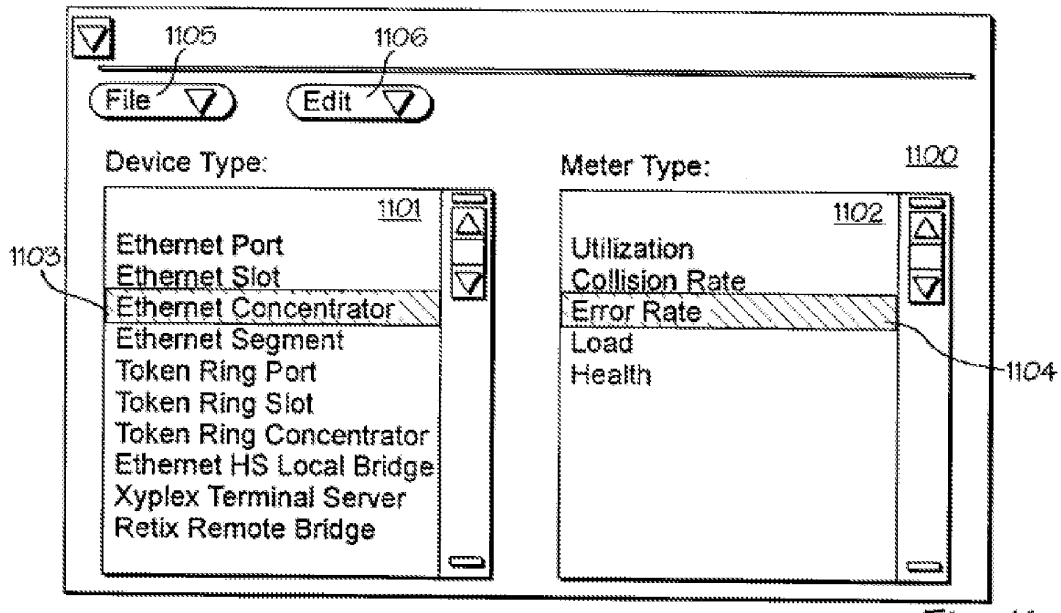


Fig. 11

The display shown in FIG. 11 provides a list of different network devices, entities, and for each device, there is a corresponding meter. The meter is based on generic the objects, e.g., health, load, etc.. Thus, Manghirmalani does **not** provide any generic representation of the network entities such as devices, systems, and components. Further, there is **not** even a remote suggestion in Manghirmalani about cloud computing platforms, and specifically of generic representation of the network entities deployed in ***different cloud computing platforms***.

The Response to Arguments states:

> "Objects" are well-known, routine, conventional, and widely referenced in networking as an instance of the data structure and behavior defined by the object's class, and therefore Manghirmalani's teaching of a generic "object" explicitly teaches the missing limitation of a "generic network entities, wherein a generic network entity includes a generic representation of respective network entities". Manghirmalani is not relied to teach any other limitation other than the recited portion above, such as "deployed in a cloud computing platform" as argued. Prabu explicitly teaches all the limitations except the element above. Manghirmalani is not

> relied upon to teach a cloud or any functional limitation associated with a cloud.
>
> During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification. See In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Furthermore, while the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. See In re American Academy of Science Tech Center, F.3d 2004 WL 1067528 (Fed. Cir. May 13, 2004).
>
> Looking at the whole element "genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms". The examiner, applying its broadest reasonable interpretation, interprets the limitation above as, based on the collected network entity data, reducing, the network entities to a generic network entity". This reduction in network entities to generic network entity applies to data as representative of a device, the "generic network entity" comprises additional data, "a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms". Prabhu explicitly discloses, teaches, and/or in the very least suggests all the limitations above, except for the version of representation of the network entity, that is simply a "generic" version (i.e., a generic object of the network entity).

However, the Examiner's interpretation of the claim element is **not** reasonable.

First, there are different types of objects and the language describing the nature and type of an object must always be taken into account, which the Examiner has **not** done. Furthermore, the reference is **not** subject to broadest reasonable interpretation but rather must be interpreted by what it actually discloses. It seems that here the Examiner is attempting to interpret Manghirmalani through the use of broadest reasonable interpretation, which is **not** proper.

More importantly, perhaps, the claim does **not** actually teach objects. That is language from Manghirmalani. The claim actually requires *generic network entities*, wherein *a generic network entity includes a generic representation of respective network entities from* ***different cloud computing platforms of the plurality of cloud computing platforms***. This disconnect would appear to be **fatal** to the Examiner's position.

It is also not clear what the Response to Arguments means by "Manghirmalani is not relied to teach any other limitation other than the recited portion above, such as "deployed in a cloud computing platform" as argued, as what the alleged portion supposedly recited above is **not** specified.

In addition, the Examiner is **failing** to appreciate and properly take into account the claim language of:

> *a generic network entity includes a generic representation of respective network entities from* ***different cloud computing platforms of the plurality of cloud computing platforms***

which amounts to a definition of what a generic entity must have, and hence such must be shown in a reference of a combination of references that is being used to teach the genericizing claim element. However, **neither** Prabhu **nor** Manghirmalani teaches such a generic network entity when the definition of the claim language is fully taken into account.

The Examiner's definition of the genericizing claim element of "based on the collected network entity data, reducing, the network entities to a generic network entity" simply does **not** meet the entirety of the claim language, at least because it simply erases from the claim the entire language regarding different cloud computing platforms. In addition, it **fails** to take into account the fact that the generic network entities must be graphable as required by the generating step, which thus further defines the nature of the generic network entities.

The generic objects of Manghirmalani, as explained hereinabove, are **not** suitable for graphing as called for in the graphing step of the claim. In addition, the generic objects of Manghirmalani, as explained above, do **not** teach anything that could be applied to Prabhu because Prabhu has **nothing** about any non-generic entities but such is required in order to have something to genericize and because Manghirmalani is only teaching to provide information on how the network is working, and such objects can**not** be graphed as called for in the claim. Thus, Prabhu does **not** have anything that can be modified by Manghirmalani to create the claim element and even if it did, Manghirmalani does **not** teach any modification that could be performed on Prabhu to derive the claim element.

Thus, Manghirmalani does **not** teach that for which the Examiner cited it, notwithstanding the Examiner's attempt to redefine the terms in the claim or the terms of Manghirmalani.

Thus, that for which Manghirmalani is cited with regard to this claim element is actually **lacking** from Manghirmalani, and hence is **lacking** form the combination as a whole.

As to the alleged motivation for combining the references, any such motivation is **irrelevant** at least because the references do **not** teach all of the claim features. Thus, even assuming that a person having ordinary skill in the art would be motivated to combine the references, such a combination would **not** result in all of the claim features. Accordingly, the claimed invention would **not** be obvious to a person having ordinary skill in the art.

Furthermore, as noted above, Prabhu is **not** a proper reference to begin an obviousness rejection given that it is directed to different subject matter, i.e., **business** entity modeling and does **not** teach any of the claim elements and so it **fails** to provide a basis that could be modified into the claim. As such, contrary to the suggestion of the Response to Arguments, there is **no** teaching, suggestion, or motivation to combine or modify the references to produce the invention as claimed.

Further in this regard, the Response to Arguments citation of Prabhu's paragraphs 105 and 23 have been dealt with above showing that they merely describe the environment in which the methods of Prabhu are hosted and do **not** indicate in any way elements that are suggested to be genericized, which is a concept that does **not** exist in Prabhu. Furthermore, notwithstanding the Examiner's suggestion to the contrary, Prabhu does **not** teach generating plural versions of any network. The scenarios discussed therein relate to **business** scenarios and **business** models, **not** to networks or network entities.

For at least the reasons discussed above, it is respectfully submitted that independent claim 1 is patentably distinguishable over the cited combination under 35 U.S.C. §103. Because claims 2-7 and 11-15 depend from independent claim 1, they incorporate the elements of independent claim 1 and are likewise patentably

distinguishable over the combination. Withdrawal of this rejection is respectfully requested.

Independent claims 16 and 17 are rejected for substantially similar reasons as is claim 1. Accordingly, the above arguments are therefore essentially repeated, *mutatis mutandis*, and applied to claims 16 and 17. Thus, claims 16 and 17, as well as claims 18-23 and 27-31 which depend from claim 17, are likewise allowable.

Withdrawal of these rejections is respectfully requested.

B. Claims 9-10 and 25-26 and 32 and 33 are not properly rejected under 35 U.S.C. §103.

Claims 9-10 and 25-26 stand rejected under 35 USC 103 as being unpatentable over Prabhu and Manghirmalani in further view of Ettle et al. (US 2007/0147269).

Claims 32 and 33 stand rejected under 35 USC 103 as being unpatentable over Prabhu and Manghirmalani in further view of Chandrashekhar et al. (US 2018/0063193).

Given that all of these rejections of dependent claims are based on the combination of Prabhu and Manghirmalani, these claims are allowable at least for the same reasons given hereinabove with regard to the respective independent claim from which they depend as none of the additional references are cited as curing the above-described deficiencies of Prabhu and Manghirmalani.

In addition, claims 32 and 33 are allowable on their own merits. Appellants explained in their prior response that each of claims 32 and 33 requires that (emphasis added):

> the generic network entity <u>represents</u> at least an entity configured to apply security rules.

Appellants previously argued that Chandrashekhar does **<u>not</u>** teach the claimed features. In Chandrashekhar, an agent is installed in each virtual machine (VM). The agent itself applies security rules to packets. Each of claims 32 and 33 does **<u>not</u>** require the generic network entity to apply a rule as is done in Chandrashekhar. Rather, the claimed generic network entity provides a <u>representation</u> of a network element configured to perform such an operation. Therefore, Chandrashekhar does **<u>not</u>** teach or suggest this claim element.

While this argument had been previously presented prior to their immediate past response, Appellants do **not** see at this time any rebuttal to this point in the Response to Arguments. Therefore, this argument should be taken as admitted to being correct.

IPR2025-01084
Orca Security EX1002 Page 117

CONCLUSION

In light of the above, Appellants respectfully submit that the rejections of the pending claims are in error, legally and factually, and must be reversed.

Respectfully submitted,

/Michael Ben-Shimon/
Michael Ben-Shimon
Reg. No.: 69,610

/Eugene Jay Rosenthal/
Eugene Jay Rosenthal
Reg. No.: 36,658

Mail all correspondence to:

CUSTOMER NO.: 122066
M&B IP Analysts, LLC
(908) 274-3111

V. CLAIMS APPENDIX

1. (Previously Presented) A method for generation of unified graph models for network entities, comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the generic network entities of the plurality of network entities; and

storing the generated network graph.

2. (Previously Presented) The method of claim 1, wherein the network entity property relates to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration.

3. (Previously Presented) The method of claim 1, wherein genericizing each of the network entities further comprises:

generating a new generic network entity, wherein the new generic network entity includes at least a network entity property of network entities.

4. (Previously Presented) The method of claim 1, wherein the new generic network entity includes at least a network entity property of the at least one network entity.

5. (Original) The method of claim 1, further comprising:

creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities.

6. (Previously Presented) The method of claim 5, wherein creating at least one imputed entity comprises:

identifying at least one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity.

7. (Previously Presented) The method of claim 6, wherein the generated network graph is a unified representation of the plurality of network entities including the imputed network entities and the generic network entities.

8. (Cancelled)

9. (Previously Presented) The method of claim 1, wherein the generated network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

10. (Original) The method of claim 9, wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

11. (Original) The method of claim 9, wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity.

12. (Original) The method of claim 11, wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge.

13. (Previously Presented) The method of claim 1, wherein storing the generated network graph further comprises:

returning at least a visualization of the generated at least one network graph.

14. (Previously Presented) The method of claim 1, wherein storing the generated at network graph further comprises:

storing the generated network graph in a graph database.

15. (Original) The method of claim 1, wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection.

16. (Previously Presented) A non-transitory computer readable medium having stored thereon instructions for causing a processing circuitry to execute a process for generation of unified graph models for network entities, the process comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network

entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the network entities of the plurality of network entities; and

storing the generated network graph.

17. (Previously Presented) A system for generating unified graph models for network entities, comprising:

a processing circuitry; and

a memory, the memory containing instructions that, when executed by the processing circuitry, configure the system to:

collect, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericize each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generate at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and

store the generated network graph.

18. (Previously Presented) The system of claim 17, wherein the network entity property relates to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration.

19. (Previously Presented) The system of claim 17, wherein the system is further configured to:

generate a new generic network entity, wherein the new generic network entity includes at least a network entity property of network entities.

20. (Previously Presented) The system of claim 17, wherein the new generic network entity includes at least a network entity property of the at least one network entity.

21. (Original) The system of claim 17, wherein the system is further configured to:

create at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities.

22. (Previously Presented) The system of claim 21, wherein the system is further configured to:

identify at least one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity.

23. (Previously Presented) The system of claim 22, wherein the generated network graph is a unified representation of the plurality of network entities including the imputed network entities and the generic network entities.

24. (Cancelled)

25. (Original) The system of claim 17, wherein the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

26. (Original) The system of claim 25, wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

27. (Original) The system of claim 25, wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity.

28. (Original) The system of claim 27, wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge.

29. (Previously Presented) The system of claim 17, wherein the system is further configured to:

return at least a visualization of the network graph.

30. (Original) The system of claim 17, wherein the system is further configured to:

store the generated network graph in a graph database.

31. (Original) The system of claim 17, wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection.

32. (Previously Presented) The method of claim 3, wherein the generic network entity represents at least an entity configured to apply security rules.

33. (Previously Presented) The system of claim 19, wherein the generic network entity represents at least an entity configured to apply security rules.

IPR2025-01084
Orca Security EX1002 Page 125

PTO/AIA/31 (12-22)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

NOTICE OF APPEAL FROM THE EXAMINER TO THE PATENT TRIAL AND APPEAL BOARD

Docket Number (Optional): WZIO P1933

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

Signature _____

Typed or printed name _____

First Named Inventor: Daniel Hershko SHEMESH	
Application Number: 17/161,190	Filed: 2021-01-28
For: SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	
Art Unit: 2443	Examiner: Michael Young WON

Applicant hereby **appeals** to the Patent Trial and Appeal Board from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ 840

☐ Applicant asserts small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by 60%, and the resulting fee is: $ _____

☐ Applicant certifies micro entity status. See 37 CFR 1.29. Therefore, the fee shown above is reduced by 80%, and the resulting fee is: $ _____
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

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

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

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 506438.

☑ Payment made via USPTO's patent electronic filing system (Patent Center or EFS-Web).

☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/AIA/22 or equivalent) is enclosed.
For extensions of time in reexamination proceedings, see 37 CFR 1.550.

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

I am the

☐ applicant

☒ attorney or agent of record
Registration number 69610

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

Signature /Michael Ben-Shimon/

Typed or printed name Michael Ben-Shimon

Telephone Number (908) 274-3111

Date 2023-06-07

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☐ * Total of _____ forms are submitted.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0031. Public burden for this form is estimated to average 12 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013). https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf

Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a Federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) 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)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 9) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Additional Uses

Additional USPTO uses of the information in this record may include disclosure to: 1) the International Bureau of the World Intellectual Property Organization, if the record is related to an international application filed under the Patent Cooperation Treaty; 2) the public i) after publication of the application pursuant to 35 U.S.C. 122(b), ii) after issuance of a patent pursuant to 35 U.S.C. 151, iii) 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, or iv) without publication of the application or patent under the specific circumstances provided for by 37 CFR 1.14(a)(1)(v)-(vii); and/or 3) the National Archives and Records Administration, for inspection of records.

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	06/07/2023 01:57:54 PM ET	WZIO P1933

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Alyce Kavanaugh
PATENT CENTER #	62222126	AUTHORIZED BY	Michael Ben-Shimon
CUSTOMER #	122066	FILING DATE	01/28/2021
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 8738	E202367E06235710	Alyce Kavanaugh

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1401	NOTICE OF APPEAL	840.00	1	840.00
			TOTAL AMOUNT:	$840.00

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	**06/07/2023 01:57:54 PM ET**	**WZIO P1933**

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Alyce Kavanaugh
PATENT CENTER #	62222126	FILING DATE	01/28/2021
CUSTOMER #	122066	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Michael Ben-Shimon

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
WZIO_P1933_Notice_of_Appeal_20230607.pdf	2	Notice of Appeal Filed	315 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
WZIO_P1933_Notice_of_Appeal_20230607.pdf	8B90720A156C3D69ED109CF91CC330CCF73524A1CB051B7EE882A228E8C1C5CDED0642B8FEB4785A6BAD6F42C6182BC45869EFF71C5C161E4DAAAC07C48C9724

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY.DOCKET NO./TITLE	REQUEST ID
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	190408

Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 06/07/2023 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

X Applicant changing to regular undiscounted fee status.

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

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Michael Ben-Shimon/
Name:	Michael Ben-Shimon
Registration Number:	69610

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.
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	6419

122066 7590 03/07/2023

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

EXAMINER	
WON, MICHAEL YOUNG	

ART UNIT	PAPER NUMBER
2443	

NOTIFICATION DATE	DELIVERY MODE
03/07/2023	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):

eofficeaction@appcoll.com
pair@mb-ip.com

Office Action Summary	**Application No.** 17/161,190	**Applicant(s)** SHEMESH et al.	
	Examiner MICHAEL Y WON	**Art Unit** 2443	**AIA (FITF) 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 13 February 2023.

☐ 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) 1-7,9-23 and 25-33 is/are pending in the application.

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

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-7,9-23 and 25-33 is/are rejected.

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

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

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

Application Papers

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

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

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

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

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

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

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

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

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

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

2. This action is in response to the Amendment filed February 13, 2023.

3. Claims 1-7, 9-23, and 25-33 have been examined and are pending with this action.

Response to Arguments

4. Applicant's arguments with respect to the rejection of claims 1-7, 11-23, and 27-31, previously rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (US 2019/0258973) in view of Manghirmalani et al. (US Pat. No.5,819,028), have been fully considered and are not persuasive.

"Objects" are well-known, routine, conventional, and widely referenced in networking as an instance of the data structure and behavior defined by the object's class, and therefore Manghirmalani's teaching of a generic "object" explicitly teaches the missing limitation of a "generic network entities, wherein a generic network entity includes a generic representation of respective network entities". Manghirmalani is not relied to teach any other limitation other than the recited portion above, such as "deployed in a cloud computing platform" as argued. Prabu explicitly teaches all the limitations except the element above. Manghirmalani is not relied upon to teach a cloud or any functional limitation associated with a cloud.

The application(s) seems to be further asserting limitations from the specification while ignoring knowledge of one of ordinary skill in the art.

During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification. See In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Furthermore, while the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. See In re American Academy of Science Tech Center, F.3d 2004 WL 1067528 (Fed. Cir. May 13, 2004).

Looking at the whole element "genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms". The examiner, applying its broadest reasonable interpretation, interprets the limitation above as, based on the collected network entity data, reducing, the network entities to a generic network entity". This reduction in network entities to generic network entity applies to data as representative of a device, the "generic network entity" comprises additional data, "a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms". Prabhu explicitly discloses, teaches, and/or in the very least suggests all the limitations above, except for the version of representation of the network entity, that is simply a "generic" version (i.e., a generic object of the network entity).

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d

1385 (2007). In this case, there are ample motivations to combine found in the art as well as generally well-known to one of ordinary skill in the art such as, they both pertain to a computer network. Furthermore, gleaning knowledge of one or ordinary skill in the art by reducing any data to a generic version enable a user or a programming to more easily understand the data as well as increase transmission speed. Additionally, Prabhu explicitly teaches in paragraph [**0105**], "*Network elements can encompass various types of routers, switches, gateways, bridges, load balancers, firewalls, servers, inline service nodes, proxies, processors, modules, or any other suitable device, component, element, or object operable to exchange information in a network environment. A network element may include appropriate processors, memory elements, hardware and/or software to support (or otherwise execute) the activities associated with using a processor for screen management functionalities, as outlined herein. Moreover, the network element may include any suitable components, modules, interfaces, or objects that facilitate the operations thereof*" (emphasis added). Even still, Prabhu teaches in paragraph [**0023**] of generating plural versions of the network, "*The generated scenario can include a first version of a particular scenario and the graphical representation can include a comparison of the first version of the particular scenario with one or more other versions of the particular scenario*".

For at least these reasons above and the rejections set forth below, claims 1-8, 11-24, and 27-33 remain rejected and pending.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

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

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7, 11-23, and 27-31 are rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (US 2019/0258973) in view of Manghirmalani et al. (US Pat. No.5,819,028).

INDEPENDENT:

As per **claim 1**, Prabhu teaches a method for generation of unified graph models for network entities, comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property (see Prabhu, **Abstract**: "*A set of source data may be received that may include entity data and relationship data. An entity may be identified in the entity data*"; [**0037**]: "*Moreover, the example system 200 of FIG. 2 can further include one or more additional computing devices, systems, and software-based tools (e.g., embodied on devices 115, 120, 125, 130, 135, 145, 150) communicating with modeling engine 205, for instance, over one or more networks (e.g., 140)*"; [**0039**]: "*In some instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models*"; [**0054**]: "*a dependency model can further model dependencies between computation entities*"; and [**0067**]: "*The diagram of FIG. 5C illustrates dependencies (e.g., at 550) between the measures M1-M11, as well as dependencies between computational entities C1-C5 (e.g., at 560) as defined in an example dependency model. A dependency model can provide the static information necessary to determine the set of affected computed measures for*

any given change to an input measure"), wherein the plurality if network entities are deployed in a plurality of cloud computing platforms (see Prabhu, [**0033**]: "*Servers can include any suitable software component or module, or computing device(s) capable of hosting and/or serving software applications and services (e.g., business models and modeling tools and services of the planning system 105, applications and services of application server 130, applications and services of enterprise system 135, etc.), including distributed, enterprise, or cloud-based software applications, data, and services. For instance, servers can be configured to host, serve, or otherwise manage models and data structures, data sets, software service and applications interfacing, coordinating with, or dependent on or used by other services and devices. In some instances, a server, system, subsystem, or computing device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or cloud computing environment and share computing resources, including shared memory, processors, and interfaces*");

genericizing each of the network entities based on the respective collected network entity data (see Prabhu, [**0042**]: "*The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data*");

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the generic network entities of the plurality of network entities (see Prabhu, **FIG. 5A-C**; [**0030**]: "*user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify, and analyze scenarios and business plans based on the models*"; and [**0076**]: "*Relationships between entities, member types, members (or groups (or "sets") of*

*members), and particular member type attributes can be non-hierarchical and/or hierarchical and, in some instances, be organized in multi-dimensional hierarchies that allow members, member groups, and member type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency mode*l"); and

storing the generated network graph (see Prabhu, [**0095**]: "*Plan models that are recorded and archived in the generation of scenarios can be managed, in some implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of scenarios that the system can simultaneously evaluate and compare, among other examples*").

Although Prabhu explicitly teaches generating a plurality of network entities, wherein a network entity includes a representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms (see rejections above), Prabhu does not explicitly the network entities are generic network entities, wherein a generic network entity includes a generic representation of respective network entities.

Manghirmalani teaches generic network entities, wherein a generic network entity includes a generic representation of respective network entities (see Manghirmalani, **col.1, lines 9-12**: "*The present invention relates to the field of network entities and domains; more specifically, to the generation and display of certain generic objects of a network entity or doma*in"; **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format. In the currently preferred embodiment, generic objects include the health, load, error, and performance of the network. In addition, these objects can also be provided to the operator for individual devices on the network*"; and **col.9,**

lines 19-21: "*The present invention addresses this problem by generating a generic object, called the "load" for the network/device*").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu in view of Manghirmalani by implementing generic network entities, wherein a generic network entity includes a generic representation of respective network entities. One would be motivated to do so because Manghirmalani teaches that such an implementation allows easy interpretation by the user (see Manghirmalani, **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format*").

As per **claim 16**, Prabhu teaches a non-transitory computer readable medium having stored thereon instructions (see Prabhu, [**0104**]: "*A computer storage medium can be a non-transitory medium*") for causing a processing circuitry to execute a process for generation of unified graph models for network entities, the process comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property (see Prabhu, **Abstract**: "*A set of source data may be received that may include entity data and relationship data. An entity may be identified in the entity data*"; [**0037**]: "*Moreover, the example system 200 of FIG. 2 can further include one or more additional computing devices, systems, and software-based tools (e.g., embodied on devices 115, 120, 125, 130, 135, 145, 150) communicating with modeling engine 205, for instance, over one or more networks (e.g., 140)*"; [**0039**]: "*In some instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models*"; [**0054**]: "*a dependency model can further model*

dependencies between computation entities"; and [**0067**]: "*The diagram of FIG. 5C illustrates dependencies (e.g., at 550) between the measures M1-M11, as well as dependencies between computational entities C1-C5 (e.g., at 560) as defined in an example dependency model. A dependency model can provide the static information necessary to determine the set of affected computed measures for any given change to an input measure*"), wherein the plurality if network entities are deployed in a plurality of cloud computing platforms (see Prabhu, [**0033**]: "*Servers can include any suitable software component or module, or computing device(s) capable of hosting and/or serving software applications and services (e.g., business models and modeling tools and services of the planning system 105, applications and services of application server 130, applications and services of enterprise system 135, etc.), including distributed, enterprise, or cloud-based software applications, data, and services. For instance, servers can be configured to host, serve, or otherwise manage models and data structures, data sets, software service and applications interfacing, coordinating with, or dependent on or used by other services and devices. In some instances, a server, system, subsystem, or computing device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or cloud computing environment and share computing resources, including shared memory, processors, and interfaces*");

genericizing each of the network entities based on the respective collected network entity data (see Prabhu, [**0042**]: "*The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data*");

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the network entities of the plurality of network entities (see Prabhu, **FIG. 5A-C**; [**0030**]: "*user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and*

applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify, and analyze scenarios and business plans based on the models"; and [**0076**]: "*Relationships between entities, member types, members (or groups (or "sets") of members), and particular member type attributes can be non-hierarchical and/or hierarchical and, in some instances, be organized in multi-dimensional hierarchies that allow members, member groups, and member type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency model*"); and

storing the generated network graph (see Prabhu, [**0095**]: "*Plan models that are recorded and archived in the generation of scenarios can be managed, in some implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of scenarios that the system can simultaneously evaluate and compare, among other examples*").

Although Prabhu explicitly teaches generating a plurality of network entities, wherein a network entity includes a representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms (see rejections above), Prabhu does not explicitly the network entities are generic network entities, wherein a generic network entity includes a generic representation of respective network entities.

Manghirmalani teaches generic network entities, wherein a generic network entity includes a generic representation of respective network entities (see Manghirmalani, **col.1, lines 9-12**: "*The present invention relates to the field of network entities and domains; more specifically, to the generation and display of certain generic objects of a network entity or dom*ain"; **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format. In the currently preferred embodiment, generic*

objects include the health, load, error, and performance of the network. In addition, these objects can also be provided to the operator for individual devices on the network"; and **col.9, lines 19-21**: "*The present invention addresses this problem by generating a generic object, called the "load" for the network/devic*e").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu in view of Manghirmalani by implementing generic network entities, wherein a generic network entity includes a generic representation of respective network entities. One would be motivated to do so because Manghirmalani teaches that such an implementation allows easy interpretation by the user (see Manghirmalani, **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format*").

As per **claim 17**, Prabhu teaches a system for generating unified graph models for network entities, comprising:

a processing circuitry (see Prabhu, [**0038**]: "*a modeling engine 205 can include one or more processors (e.g., 230) and memory elements (e.g., 235), as well as one or more software- and/or hardware-implemented components and tools embodying functionality of the modeling engine 205*"); and

a memory, the memory containing instructions that, when executed by the processing circuitry (see Prabhu, [**0104**]: "*A computer storage medium can be a non-transitory medium*"), configure the system to:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property (see Prabhu, **Abstract**: "*A set of source data may be received that may include entity data and relationship data. An entity may be identified in the*

entity data"; [**0037**]: "*Moreover, the example system 200 of FIG. 2 can further include one or more additional computing devices, systems, and software-based tools (e.g., embodied on devices 115, 120, 125, 130, 135, 145, 150) communicating with modeling engine 205, for instance, over one or more networks (e.g., 140)*"; [**0039**]: "*In some instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models*"; [**0054**]: "*a dependency model can further model dependencies between computation entities*"; and [**0067**]: "*The diagram of FIG. 5C illustrates dependencies (e.g., at 550) between the measures M1-M11, as well as dependencies between computational entities C1-C5 (e.g., at 560) as defined in an example dependency model. A dependency model can provide the static information necessary to determine the set of affected computed measures for any given change to an input measure*"), wherein the plurality if network entities are deployed in a plurality of cloud computing platforms (see Prabhu, [**0033**]: "*Servers can include any suitable software component or module, or computing device(s) capable of hosting and/or serving software applications and services (e.g., business models and modeling tools and services of the planning system 105, applications and services of application server 130, applications and services of enterprise system 135, etc.), including distributed, enterprise, or cloud-based software applications, data, and services. For instance, servers can be configured to host, serve, or otherwise manage models and data structures, data sets, software service and applications interfacing, coordinating with, or dependent on or used by other services and devices. In some instances, a server, system, subsystem, or computing device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or*

cloud computing environment and share computing resources, including shared memory, processors, and interfaces");

genericizing each of the network entities based on the respective collected network entity data (see Prabhu, [**0042**]: "*The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data*");

generate at least a network graph, wherein the generated network graph is a multi- dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities (see Prabhu, **FIG. 5A-C**; [**0030**]: "*user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify, and analyze scenarios and business plans based on the models*"; and [**0076**]: "*Relationships between entities, member types, members (or groups (or "sets") of members), and particular member type attributes can be non-hierarchical and/or hierarchical and, in some instances, be organized in multi-dimensional hierarchies that allow members, member groups, and member type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency model*"); and

store the generated network graph (see Prabhu, [**0095**]: "*Plan models that are recorded and archived in the generation of scenarios can be managed, in some implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of*

scenarios that the system can simultaneously evaluate and compare, among other examples").

Although Prabhu explicitly teaches generating a plurality of network entities, wherein a network entity includes a representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms (see rejections above), Prabhu does not explicitly the network entities are generic network entities, wherein a generic network entity includes a generic representation of respective network entities.

Manghirmalani teaches generic network entities, wherein a generic network entity includes a generic representation of respective network entities (see Manghirmalani, **col.1, lines 9-12**: "*The present invention relates to the field of network entities and domains; more specifically, to the generation and display of certain generic objects of a network entity or domain*"; **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format. In the currently preferred embodiment, generic objects include the health, load, error, and performance of the network. In addition, these objects can also be provided to the operator for individual devices on the network*"; and **col.9, lines 19-21**: "*The present invention addresses this problem by generating a generic object, called the "load" for the network/device*").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu in view of Manghirmalani by implementing generic network entities, wherein a generic network entity includes a generic representation of respective network entities. One would be motivated to do so because Manghirmalani teaches that such an implementation allows easy interpretation by the user (see Manghirmalani, **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format*").

DEPENDENT:

As per **claims 2 and 18**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein the network entity property relates to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration (see Prabhu, [**0048**]: "*Each of the member types 315a, 315b can respectively define a set of member-type attributes (e.g., 330a, 330b) describing features and details generally relevant to members of that type. For example, a television member type 315a can include member type attributes such as the refresh rate, screen size, and technology (e.g., LED, LCD, plasma, etc.) of a particular television (i.e., member of the television member type), including other potential television-related attributes. Similarly, a computer member type 315b, while a member type of the same business entity (e.g., Product), can have a different set of attributes corresponding to features and specifications of computers, such as processor type, processor speed, memory, hard drive, etc*").

As per **claims 3 and 19**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein genericizing each of the network entities further comprises: generating a new generic network entity, wherein the new generic network entity includes at least a network entity property of network entities (see Prabhu, [**0042**]: "*The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data*").

As per **claims 4 and 20**, which respectively depend on claims 1, and 17, Prabhu and Manghirmalani further teach wherein the new generic network entity includes at least a network entity property of the at least one network entity (see Prabhu, [**0042**]: "*The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data*").

As per **claims 5 and 21**, which respectively depend on claims 1, and 17, Prabhu further teaches further comprising: creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities (see Prabhu, [**0039**]: "*In some implementations, an example model generator 240 can be included possessing functionality for creating or editing business models. In some instances, a model can be generated by instantiating an instance of a preexisting model type, model template, or class, among other examples*").

As per **claims 6 and 22**, which respectively depend on claims 5, and 21, Prabhu further teaches wherein creating at least one imputed entity comprises: identifying at least one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity (see Prabhu, [**0039**]: "*In some instances, a model can be generated by instantiating an instance of a preexisting model type, model template, or class, among other examples*").

As per **claims 7 and 23**, which respectively depend on claims 6, and 22, Prabhu and Manghirmalani further teaches wherein the generated network graph is a unified representation of the plurality of network entities including the imputed network entities and the generic network entities (see Prabhu, [**0029**]: "*The modeled relationships can include both hierarchical and non-hierarchical relationships and dependencies. Based on this capability, the framework can be used for modeling a large number of business entities and business workflows to give business users complete visibility into modeled aspects of the business workflow and scenarios*"; and **claim 1**: "*A system for representing unified graph and hierarchy relationships*").

As per **claims 11 and 27**, which respectively depend on claims 9, and 25, Prabhu further teaches wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities,

wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity (see Prabhu, **FIG. 5A-C**).

As per **claims 12 and 28**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge (see Prabhu, **FIG. 3A**; and [**0040**]: "*Data storage engine 245 can store and manage measures and measure (fact) data for applicable sets of business entities models, meta data for describing and processing entities, relationships, and fact data (such as computation rules, procedures, scripts) included in the business models, among other data. Data elements can include, for examples, data elements describing domains (e.g., product domain, organization domain, etc.), attributes (e.g., products, product brands, product categories, etc.), hierarchies (e.g., Product->Brand->Category), non-hierarchical relationships (e.g., Competitor: Product=>Competitor Product), submitted and computed measures (e.g., gross or net sales for a particular market segment), facts (or measure data) (e.g., the actual values of gross sales, net sales, and other measures), and meta data (e.g., active rules, measure calculations, model logic, procedures, etc.), among other examples*").

As per **claims 13 and 29**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein storing the generated at least one network graph comprises: returning at least a visualization of the generated at least one network graph (see Prabhu, [**0040**]: "*Data managed by data storage engine 245 can be stored in-memory, on-disk, or through a combination. The data storage engine 245 can support a set of data operators allowed to access or modify the data, in some cases providing multi-user transaction support for data access, among other example functionality and features*").

As per **claims 14 and 30**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein storing the generated at least one network graph further comprises:

storing the generated network graph in a graph database (see Prabhu, **FIG. 2**; and [**0040**]: "*Data managed by data storage engine 245 can be stored in-memory, on-disk, or through a combination. The data storage engine 245 can support a set of data operators allowed to access or modify the data, in some cases providing multi-user transaction support for data access, among other example functionality and features*").

As per **claims 15 and 31**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection (see Prabhu, **FIG. 5C**).

6. Claims 9, 10, 25, and 26 are rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (US 2019/0258973) and Manghirmalani et al. (US Pat. No.5,819,028), and still further in view of Ettle et al. (US 2007/0147269).

As per **claims 9 and 25**, which respectively depend on claims 1, and 17, Prabhu and Manghirmalani do not explicitly teach wherein the generated network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

Ettle teaches wherein the generated network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity (see Ettle, [**0076**]: "*The topology search is based upon an abstract model of the network in which groups of equivalent network nodes in the underlying network model are represented as vertices in a simplified network graph (with a given vertex*

representing a node group), and the connectivity between these groups is represented by edges in the graph").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu and Manghirmalani in view of Ettle so that the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity. One would be motivated to do so because vertex are routine, conventional, and widely employed in a graph representation.

As per **claims 10 and 26**, which respectively depend on claims 9, and 25, Prabhu and Manghirmalani do not explicitly teach wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

Ettle teaches the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex (see Ettle, [**0166**]: "*The route view 122 includes icons 128 representing the route nodes, labelled with node names, and circuit connections represented graphically as pipes 130 labelled with the connection type*").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu and Manghirmalani in view of Ettle so that the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex. One would be motivated to do so because vertex are routine, conventional, and widely employed in a graph representation.

7. Claims 32 and 33 are rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (US 2019/0258973) and Manghirmalani et al. (US Pat. No.5,819,028), and still further in view of Chandrashekhar et al. (US 2018/0063193).

As per **claims 32 and 33**, which respectively depend on claims 3 and 19, although Manghirmalani explicitly teaches generic network entity (see independent claim rejections above), Prabhu and Manghirmalani do not explicitly teach wherein the generic network entity represents at least an entity configured to apply security rules.

Chandrashekhar teaches representing at least an entity configured to apply security rules (see Chandrashekhar, [**0098**]: "*The control agent 170 uses this data to configure the MFE 175 to apply networking and/or security rules to packet sent to and from the workload application 165, similar to how the local controller 120 configures the MFEs 130*").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu and Manghirmalani in view of Chandrashekhar so that the generic network entity represents at least an entity configured to apply security rules. One would be motivated to do so because Prabhu teaches in paragraph [**0028**], "*Accordingly, such plan models can be used to coordinate the efforts of various portions of an organization directed to different goals to optimize the activities of an organization*", emphasis added, wherein security is a vital element of any organization.

Conclusion

8. For the reasons above, claims 1-7, 9-23, and 25-33 have been rejected and remain pending.

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

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

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL Y WON whose telephone number is (571)272-3993. The examiner can normally be reached on Wk.1: M-F: 8-5 PST & Wk.2: M-Th: 8-7 PST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nicholas R Taylor can be reached on 571-272-3889. 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.

/Michael Won/

Primary Examiner, Art Unit 2443

Notice of References Cited	Application/Control No. 17/161,190	Applicant(s)/Patent Under Reexamination SHEMESH et al.	
	Examiner MICHAEL Y WON	Art Unit 2443	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-20160019033-A1	01-2016	EBNER; Stefan	G06F8/38	717/104
*	B	US-20200167642-A1	05-2020	Dhurandhar; Amit	G06N20/00	1/1
*	C	US-20200236038-A1	07-2020	Liu; Shaoteng	H04L45/02	1/1
*	D	US-20210342685-A1	11-2021	Dhurandhar; Amit	G06N3/042	1/1
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

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.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	Art Unit
	MICHAEL Y WON	2443

CPC - Searched*		
Symbol	Date	Examiner
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	12/16/2021	MW
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	10/04/2022	MW
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	02/28/2023	MW

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
PE2E SEARCH	12/16/2021	MW
INVENTOR/ASSIGNEE SEARCH	12/16/2021	MW
NPL SEARCH: DIALOG	12/17/2021	MW
PE2E SEARCH	10/04/2022	MW
NPL SEARCH: DIALOG	10/04/2022	MW
PE2E SEARCH	02/28/2023	MW
NPL SEARCH: DIALOG	03/01/2023	MW

IPR2025-01084
Orca Security EX1002 Page 157

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	Art Unit
	MICHAEL Y WON	2443

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

IPR2025-01084
Orca Security EX1002 Page 158

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	Art Unit
	MICHAEL Y WON	2443

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	12/17/2021	04/01/2022	10/04/2022	03/01/2023					
	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	✓	✓	✓	✓					
	32		✓	✓	✓					
	33		✓	✓	✓					

IPR2025-01084
Orca Security EX1002 Page 159

Dialog®

STIC
Scientific and Technical Information Center

Search Strategy from Dialog

March 01 2023 18:45

IPR2025-01084
Orca Security EX1002 Page 160

Search Strategy

Databases: ABI/INFORM® Professional Advanced, Abstracts in New Technology & Engineering, AdisInsight: Drugs, AdisInsight: Trials, Adis Pharmacoeconomics & Outcomes News, AGRICOLA, AGRIS, Allied & Complementary Medicine™, Analytical Abstracts, APA PsycInfo®, Aqualine, Aquatic Science & Fisheries Abstracts (ASFA), Australian Education Index, BIOSIS® Toxicology, BIOSIS Previews®, British Library Inside Conferences, British Nursing Index, Business & Industry, CAB ABSTRACTS, Chemical Business Newsbase, Chemical Engineering & Biotechnology Abstracts, Chemical Safety Newsbase, Civil Engineering Abstracts, ClinicalTrials.gov, Current Contents® Search, Derwent Drug File, Derwent Drug Registry, DH-DATA: Health Administration, Medical Toxicology & Environmental Health, DIOGENES® FDA Regulatory Updates, Drug Information Fulltext, Earthquake Engineering Abstracts, EconLit, Ei Compendex®, Ei EnCompassLIT, Embase®, Embase® French Local Literature, Embase Preprints, EMCare®, ERIC, ESPICOM Pharmaceutical & Medical Device News, FDAnews, FLUIDEX (Fluid Engineering Abstracts), Foodline®: MARKET, Foodline®: PRODUCT, Foodline®: SCIENCE, FSTA®, Gale Group Computer Database™, Gale Group Health Periodicals Database, Gale Group New Product Announcements / Plus®, Gale Group Newsletter Database™, Gale Group PharmaBiomed Business Journals, Gale Group PROMT®, Gale Group Trade & Industry Database™, GEOBASE, GeoRef, Global Health, HSELINE: Health and Safety, ICONDA - International Construction Database, IMS Company Profiles, IMS New Product Focus, IMS Pharma Trademarks, IMS R&D Focus, IMS R&D Focus Drug News, Inspec®, International Pharmaceutical Abstracts, Jane's Defense & Aerospace News, King's Fund, KOSMET: Cosmetic Science, Lancet Titles, Mechanical & Transportation Engineering Abstracts, MEDLINE®, Meteorological & Geoastrophysical Abstracts, Morressier Life Science Conference Abstracts and Posters, New England Journal of Medicine, Northern Light Life Sciences Conference Abstracts, NTIS: National Technical Information Service, Oceanic Abstracts, PAIS International, Paperbase, PAPERCHEM, ProQuest Advanced Tech & Aerospace Professional, ProQuest Biological & Health Science Professional, ProQuest Dissertations and Theses Professional, ProQuest Environmental Science Professional, ProQuest Materials Research Professional, ProQuest Newsstand Professional, ProQuest Technology Research Professional, Prous Science Daily Essentials, Prous Science Drug Data Report, Prous Science Drugs Of The Future™, Publicly Available Content, Registry of Toxic Effects of Chemical Substances (RTECS®), SciSearch®: a Cited Reference Science Database, Social SciSearch®, ToxFile®, Transport Research International Documentation, TULSA™ (Petroleum Abstracts), UBM Computer Full Text, Weldasearch®, Zoological Record

Set#	Searched for	Results
S1	(generic near/2 version and generat$5 near/10 (model or graph) and cloud)	465°
S2	(generic near/2 version and generat$5 near/10 (model or graph) and cloud and genericizing)	1°
S3	(generic OR basic OR generic OR plain) near/4 represent$6 near/6 network near/4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model near/20 network	283°
S4	(generic OR basic OR generic OR plain) near/4 represent$6 near/6 network near/4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model near/20 network and cloud	42°
S5	(basic OR generic OR general OR simple) near/2 representation near/4 network	2733°
S6	(basic OR generic OR general OR simple) near/2 representation near/4 network and cloud and genericiz$4	0°

IPR2025-01084
Orca Security EX1002 Page 161

	representation near/4 network and cloud and genericiz$4	
S7	(basic OR generic OR general OR simple) near/2 representation near/4 network AND network near/4 cloud	47°
S8	(basic OR generic OR general OR simple) near/2 representation near/4 network AND network near/4 cloud AND (tear-down OR tear near/1 down OR reduc$4 OR break-down OR break$4 near/1 down or conver$5 or reduc$5 or modif$6 or adjust$4) near/10 (basic OR generic OR general OR simple or plain)	7°

° Duplicates are removed from the search and from the result count.

Contact ProQuest
Copyright © 2023 ProQuest LLC. All rights reserved. - Terms and Conditions

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	201700	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:27 PM
L2	60	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND genericiz$5	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:42 PM
L3	0	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND genericiz$5 AND (collect$4 OR gather$4 OR retriev$4) near10 characteristics AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:46 PM
L4	0	genericiz$5 AND (collect$4 OR gather$4 OR retriev$4) near10 characteristics AND	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU,	OR	ON	ON	2021/12/16 01:52 PM

		generat$4 near10 network near4 graph	CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L5	1	genericiz$5 AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:53 PM
L6	0	genericiz$5 near5 (collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:54 PM
L7	7	genericiz$5 near5 (collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN,	OR	ON	ON	2021/12/16 01:54 PM

IPR2025-01084
Orca Security EX1002 Page 165

			WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L8	35	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:58 PM
L9	6	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph near10 relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:03 PM
L10	2	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 (network near6 graph OR topology) near10 relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:04 PM
L11	81694	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2021/12/16 02:07 PM

			EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L12	4673	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:07 PM
L13	1967	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional AND stor$4 near6(graph OR model)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:08 PM
L14	1794	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO;	OR	ON	ON	2021/12/16 02:09 PM

			JPO; DERWENT; IBM_TDB)				
L15	327	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:09 PM
L16	143	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR generic)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:10 PM
L17	221	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:10 PM
L18	153	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:11 PM

IPR2025-01084
Orca Security EX1002 Page 168

		dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw))					
L19	143	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw)) AND network near4 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:22 PM
L20	116	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw)) AND network near4 (device OR node OR entity OR module) AND (device OR node OR entity OR module) near3 (class OR type OR category OR configuration)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:24 PM
L21	164301	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) topolog$5 near5 network	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:31 PM
L22	1330	generat$4 near10	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16

		(network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 network					08:31 PM
L23	104489	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 networkand multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:33 PM
L24	110	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 network AND multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:33 PM
L25	532	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:38 PM
L26	422	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:38 PM

		OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24					
L27	230	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:39 PM
L28	112	topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM
L29	3986517	network near6topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM
L30	57	network near6 topology AND (discover$4 OR generat$4) near10	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM

		(network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24					
L31	1254	network near6 topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:54 PM
L32	18	network near6 topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:55 PM
L33	8	network near6 topology AND network near6 discovery AND (generat$4) near6 (graph OR model OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:00 PM

		node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)					
L34	10466718	(creat$5 OR generat$5)network near6 topology AND network near6 discovery AND (graph OR model OR topology) near6 network AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:03 PM
L35	0	(creat$5 OR generat$5) near5 network near6 topology AND network near6 discovery AND (graph OR model OR topology) near6 network AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:03 PM
L36	2194	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:05 PM
L37	179	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:06 PM

		model) near5 (user OR client) AND (multidimensional OR multi-dimensional)					
L38	1261503	collect	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:10 PM
L39	156	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client) AND (multidimensional OR multi-dimensional) AND (collect$4 OR gather$4 OR receiv$5 OR retriev$4) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:13 PM
L40	165	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client) AND (multidimensional OR multi-dimensional) AND (collect$4 OR gather$4 OR receiv$5 OR retriev$4 OR captur$4) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:14 PM
L41	2457290	convert	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 10:20 PM
L42	17228	(model) WITH vertex WITH (entity OR device OR node OR module)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2021/12/17 12:24 AM

			IBM_TDB)				
L43	398	(model) WITH vertex WITH network near2 (entity OR device OR node OR module)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/17 12:24 AM
L44	39	(model) WITH vertex WITH network near2 (entity OR device OR node OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/17 12:25 AM
L45	2	"20180024981" "20200322227"	(US-PGPUB)	OR	ON	ON	2022/04/01 12:08 PM
L46	2	"20190258973" "20070147269"	(US-PGPUB)	OR	ON	ON	2022/04/01 12:10 PM
L47	670	generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:23 PM
L48	13	generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO;	OR	ON	ON	2022/04/01 12:25 PM

			JPO; DERWENT; IBM_TDB)				
L49	3	generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/01 12:25 PM
L50	121	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:53 PM
L51	0	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:53 PM
L52	25	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND security	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL,	OR	ON	ON	2022/04/01 02:33 PM

IPR2025-01084
Orca Security EX1002 Page 176

		near4 protocol	PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L53	2	provisioning AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:47 PM
L54	1638	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:49 PM
L55	221	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:50 PM
L56	177	(H04L43/045 OR G06F16/9024 OR	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2022/04/01 02:50 PM

		H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule AND topology	AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L57	159	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule AND topology	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/01 02:50 PM
L58	20	generat$5 WITH generic near3 network near3 (entities OR devices OR components)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/08/04 01:25 PM
L59	0	(neutral OR general OR generic OR basic) near4 representation near10 network near2 (entitites OR nodes OR components OR devices) AND plurality near5 cloud	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 01:41 PM
L60	4	generat$5 near10 (graph OR model) AND (neutral OR general OR generic OR basic) near4 representation AND network near2 (entitites OR nodes OR components OR devices) WITH graph AND plurality near5 cloud	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 01:42 PM
L61	2400375	node	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 01:49 PM
L62	24	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (generic OR basic OR generic OR plain) near4	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 04:58 PM

		represent$6 near6 network near4 (device OR component OR entit$4 OR node)					
L63	24	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 04:59 PM
L64	22	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model WITH network	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:50 PM
L65	132	(generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model WITH network	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:50 PM
L66	110	(generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model WITH network NOT L64	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:51 PM
L67	38	(generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:57 PM

		model WITH network NOT L64 AND clouds					
L68	882	(basic OR generic OR general OR simple) near2 representation near4 network	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 02:33 PM
L69	116	(basic OR generic OR general OR simple) near2 representation near4 network AND network near4 cloud	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 02:33 PM
L70	2	(basic OR generic OR general OR simple) near2 representation near4 network AND network near4 cloud AND (tear-down OR tear near1 down OR reduc$4 OR break-down OR break$4 near1 down) WITH (basic OR generic OR general OR simple)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 02:34 PM
L71	441	(basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 02:54 PM
L72	36	(basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4) near10 (basic OR generic OR general OR simple)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 02:55 PM
L73	35	(basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4) near10 (basic OR generic OR general OR simple) AND (basic OR generic OR general OR simple) AND (devices OR	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 03:07 PM

		entities OR nodes)					
L74	49	(basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4 OR normaliz$6) near10 (basic OR generic OR general OR simple) AND (basic OR generic OR general OR simple) AND (devices OR entities OR nodes)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 03:09 PM
L75	14	(basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4 OR normaliz$6) near10 (basic OR generic OR general OR simple) AND (basic OR generic OR general OR simple) AND (devices OR entities OR nodes) NOT L73	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 03:09 PM
L76	1	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (basic OR generic OR general OR simple) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4) near10 (basic OR generic OR general OR simple) AND (basic OR generic OR general OR simple) AND (devices OR entities OR nodes)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 03:10 PM
L77	140	(basic OR generic OR general OR simple OR plain OR native OR	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 06:42 PM

		raw) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4 OR chang$4 OR conver$6) near10 (basic OR generic OR general OR simple OR plain OR native OR raw)					
L78	72	(basic OR generic OR general OR simple OR plain OR native OR raw) near2 (model OR version OR representation) near4 network AND network near4 cloud AND (modif$6 OR adjust$5 OR reduc$4 OR chang$4 OR conver$6) near10 (basic OR generic OR general OR simple OR plain OR native OR raw) AND (devices OR entities OR nodes) AND generat$5 near10 (model OR graph)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/03/01 06:43 PM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Daniel Hershko SHEMESH et al.
Serial No:	17/161,190
Filed:	January 28, 2021
Docket No.:	WZIO P1933
Examiner:	WON, MICHAEL YOUNG
Art Unit:	2443
Confirmation No.:	6419

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

AMENDMENT UNDER 37 CFR §1.111

Sir:

Applicants hereby petition for a one (1) month extension of time, thereby extending the date of response to the non-final Office Action dated **October 11, 2022,** the required fee being paid through the EFS. In response to the non-final Office Action dated **October 11, 2022**, the following amendments and remarks are hereby submitted. Reconsideration of the application is respectfully requested.

Remarks begin on page 2 of this paper.

REMARKS

In the Non-Final Office Action dated October 11, 2022, it is noted that claims 1-7, 9-23, and 25-33 are pending. Claims 1-7, 11-23, 27-31, 9-10, 25-26, and 32-33 stand rejected under 35 USC 103. By this amendment, various claims have been amended. By the foregoing amendments, no new matter has been added.

Claim Rejections under 35 USC 103

Claims 1-7, 11-23, and 27-31 stand rejected under 35 USC 103 as being anticipated by Prabhu et al. (US 2019/0258973), hereinafter "Prabhu" in view of Manghirmalani et al. (US Pat. No. 5,819,028) hereinafter "Manghirmalani." Applicants respectfully disagree and traverse the rejection.

Applicants avoid this ground of rejection for the following reasons.

Independent Claim 1 and dependent Claims 2-7 and 11-15

Independent claim 1 recites (emphasis added):

> wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

The Office Action now points to the combination of Prabhu and Manghirmalani as allegedly showing these claimed features. The Office Action, page 6, asserts:

> Although Prabhu explicitly teaches generating a plurality of network entities, wherein a network entity includes a representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms (see rejections above), Prabhu does not explicitly the network entities are generic network entities, wherein a generic network entity includes a generic representation of respective network entities.

> Manghirmalani teaches generic network entities, wherein a generic network entity includes a generic representation of respective network entities (see Manghirmalani, **col.1, lines 9-12**: "The present invention relates to the field of network entities and domains; more specifically, to the generation and display of certain generic objects of a network entity or domain"; **col.6, lines 9-16**: "This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format. In the currently preferred embodiment, generic objects include the health, load, error, and performance of the network. In addition, these objects can also be provided to the operator for individual devices on the network"; and **col.9, lines 19-21**: "The present invention addresses this problem by generating a generic object, called the "load" for the network/device").

Applicant disagrees. First, Manghirmalani does **not** show or suggest "generic network entities," and specifically network entities **deployed** in a plurality of cloud computing platforms.

Manghirmalani discloses reducing the data gathered by the agents into a set of common or generic objects. As cited above, these common or generic objects are then displayed to the operator in an easy-to-understand format. The generic objects include **the health, load, error, and performance of the network**. (**col.6, lines 11 -16)** Manghirmalani further explains (Col. 6., lines 19-27) that the "health" of a network is an overall numerical representation of how well the network is functioning. Error object (Col. 9, lines 57-63) is another generic object for relaying information to the operator is the network "error." Other examples of "generic objects" provided by Manghirmalani related to the status of network devices, such as performance and load objects. As such, the generic objects of Manghirmalani do **not** provide generic representations of network devices, specifically network devices in different clouds. To support this argument, Applicant points to Fig. 11 of Manghirmalani (reproduced herein)

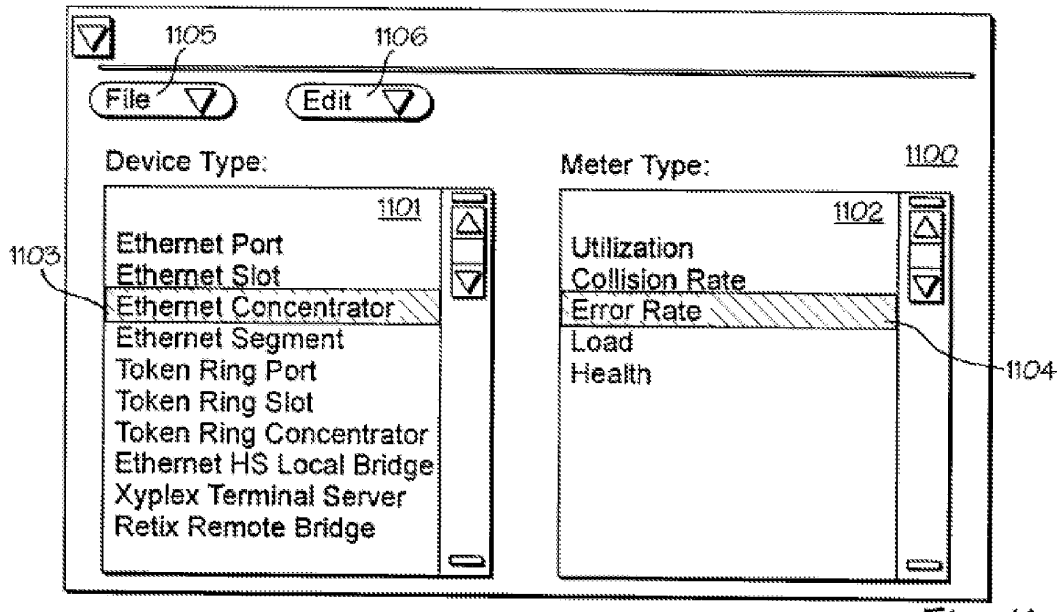


Fig. 11

The display shown in Fig. 11 provides a list of different network devices (entities), and for each device, there is a corresponding meter. The meter is based on generic objects (e.g., health, load, etc.). Thus, Manghirmalani does **not** provide any generic representation of the network entities (such as devices, systems, and components). Further, there is **not** even a remote suggestion in Manghirmalani about cloud computing platforms, and specifically of generic representation of the network entities deployed in different cloud computing platforms.

Applicant further submits that citing Manghirmalani in combination with Prabhu does not meet the legal standard of obviousness. It is a well-established practice that each cited reference must be considered in its entirety, including disclosures that teach away from the claims. *See Section MPEP 2140.2*

Furthermore, an obviousness rejection can**not** be based on the invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. That Court stated that such an approach would be “an illogical and

inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp., 81 F.3d 1566, 1570, 38 U.S.P.Q.2d 1551, 1554 (Fed.Cir.1996).*

Here, the Office Action merely uses the phrase "generic objects" found in Manghirmalani and attempts to force the context and meaning of such a phrase to the claimed language. The Office Action ignores the teachings of Manghirmalani, where generic objects relate to the health of network devices and not to the devices themselves. In other words, applying the "generic objects" as disclosed by Manghirmalani in the proper context, would **not** lead to the claimed features of: "a generic network entity includes generic representation of respective network entities from different cloud computing platforms."

Therefore, Manghirmalani can**not** be reasonably applied to independent claim 1 as the cited paragraphs do not appear relevant. As such, the application of Manghirmalani to the instant claims appears as an attempt to manufacture the rejection merely based on some terms such as "generic objects."

Applicant further submits that the Examiner acknowledged the amendment presented in response to the final Office action as overcoming the cited art, at the time, Prabhu. Such amendment reads as follows:

> wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms; [emphasis added]

However, the Office Action cites Manghirmalani only to show a "generic network entity," ignoring the claimed language of "different cloud computing platforms of the plurality of cloud computing platforms." Therefore, Applicant submits that the rejection is improper as the Office acknowledged that Prabhu fails to teach or show "**network entities from different cloud computing platforms of the plurality of cloud computing platforms**," as claimed by the Applicant.

Applicant maintains that Prabhu does **not** teach or suggest the modeling **network** entities deployed in the *cloud computing platforms* as called for in claim 1. At best, the planning system of Prabhu, which may be deployed in the cloud, generates the business models, but such a system is **not** being modeled. That is, Prabhu does **not** provide a

graph representation of the planning system, but rather a representation of business entities **not** deployed in the cloud. Thus, Prabhu does not disclose modeling **network** entities deployed in the **cloud computing platforms**, as required by Applicant's claim 1.

Thus, Prabhu and Manghirmalani, either in combination or separately, fail to teach or suggest **a generic network entity that includes a generic representation of respective network entities from different cloud computing platforms**, as required by the independent claim 1.

Accordingly, even assuming for the sake of argument that one of the ordinary skill in the art were somehow motivated to combine Prabhu with Manghirmalani as suggested in the Office Action, the proposed combination would still fail to result in each and every element recited in the independent claim 1. The proposed combination, therefore, fails to render the independent claims 1 along with the respective dependent claims 2-7 and 11-15 *prima facie* of obviousness. Accordingly, reconsideration of the rejections and allowance of all pending claims are respectfully requested.

Independent claims 16 and 17 dependent claims 18-24, and 27-31

Independent claims 16 and 17 stand rejected for substantially similar reasons as in claim 1. Accordingly, the above arguments are therefore essentially repeated, *mutatis mutandis*, and applied to claims 16 and 17. Thus, claims 16 and 17, as well as claims 18-23 and 27-31, which depend on claim 17, are likewise allowable.

Withdrawal of these rejections is respectfully requested.

Claim Rejections under 35 USC 103

Claims 9-10 and 25-26 stand rejected under 35 USC 103 as being unpatentable over Prabhu et al. (US 2019/0258973) in view of Ettle et al. (US 2007/0147269).

Given that these rejections of dependent claims are based on the combination of Prabhu and Ettle, these claims are allowable at least for the same reasons given hereinabove with regard to the respective independent claim from which they depend as the additional reference, Ettle, is cited as curing the above-described deficiencies of Prabhu. Withdrawal of these rejections is respectfully requested.

Claim Rejections under 35 USC 103

Claims 32 and 33 stand rejected under 35 USC 103 as being unpatentable over Prabhu in view of Chandrashekhar et al. (US 2018/0063193).

Each of claims 32 and 33 requires that (emphasis added):

> the generic network entity represents at least an entity configured to apply security rules.

Applicant previously argued that Chandrashekhar does **not** teach the claimed features. In Chandrashekhar, an agent is installed in each VM (VIRTUAL MACHINE). The agent applies security rules. Each of claims 32 and 33 does **not** require the generic network entity to apply a rule. Instead, the claimed generic network entity provides a representation of a network element configured to perform such an operation. Therefore, Chandrashekhar does **not** teach, show, or suggest the features of claims 32-33.

In response, the Office Action, page 4, asserts that:

> Chandrashekhar was merely to teach the implementation or application of "security rules". Manghirmalani has been cited to explicitly teach of "generic" network entities.

Thus, the Office action completely ignores Applicants' arguments with regard to the security rules. With respect to Manghirmalani as demonstrated below, Manghirmalani fails to the claimed features of "generic" network entities.

Applicant further submits that the rejections of dependent claims 32 and 33 are based on the combination of Prabhu, Manghirmalani, and Chandrashekhar, these claims are allowable at least for the same reasons given hereinabove with regard to the respective independent claim from which they depend as the additional reference, Chandrashekhar, is cited as curing the above-described deficiencies of Prabhu and Manghirmalani. Withdrawal of these rejections is respectfully requested.

CONCLUSION

Having fully addressed the Office Action's rejections, it is believed that, in view of the preceding remarks, this application stands in condition for allowance. Accordingly, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the Applicants' representative at (908) 274-3111, so that a mutually convenient date and time for a telephonic interview may be scheduled.

Any fee due this paper may be charged to, or overpayment credited to, deposit account **50-6438.**

Respectfully submitted,
M&B IP Analysts, L.L.C.

/Michael Ben-Shimon/
Michael Ben-Shimon
Reg. No.: 69,610

Mail all correspondence to:
CUSTOMER NO.: 122066

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	**02/13/2023 04:39:11 PM ET**	**WZIO P1933**

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Alyce Kavanaugh
PATENT CENTER #	61586400	FILING DATE	01/28/2021
CUSTOMER #	122066	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Michael Ben-Shimon

Documents

TOTAL DOCUMENTS: 2

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
WZIO_P1933_nfoa_response_dated_2022110_20230213.pdf		8	-	153 KB
WZIO_P1933_nfoa_response_dated_2022110_20230213-A...pdf	(1-1)	1	Amendment/Request for Reconsideration-After Non-Final Rejection	78 KB
WZIO_P1933_nfoa_response_dated_2022110_20230213-REM.pdf	(2-8)	7	Applicant Arguments/Remarks Made in an Amendment	144 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
WZIO_P1933_nfoa_response_dated_2022110_20230213.pdf	64B0177166EEB46B115A4EF44E5F9047F1DED9A3ED61E0CABCFE20EFFED0BB33BA741EF60912F8EFC0F656F0B46D9B3ADFA6443788E31BAD27B4FF7351679503
WZIO_P1933_nfoa_response_dated_2022110_20230213-A....pdf	612E565FB14174AC55F511163E3450EA6835E0D6E9E5CBFE8F6863BBA713A455815D85FBF322A99790A564EE72F7D531473E79A4E67B2E0859E10CFE787FD7F6
WZIO_P1933_nfoa_response_dated_2022110_20230213-REM.pdf	0F3A734246485BBE0F05BDA0C43C4DC366631FC27BE9150C0D3D87F0AAAB6FED03C5FB3FD693E73CEA49B94F2B8B2CEA08D49BE13276CD04BC9B2DC777E96102

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	02/13/2023 04:39:11 PM ET	WZIO P1933

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Alyce Kavanaugh
PATENT CENTER #	61586400	AUTHORIZED BY	Michael Ben-Shimon
CUSTOMER #	122066	FILING DATE	01/28/2021
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 1247	E20232CG40367306	Alyce Kavanaugh

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
2251	EXTENSION FOR RESPONSE WITHIN FIRST MONTH	88.00	1	88.00
			TOTAL AMOUNT:	$88.00

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	6419

122066 7590 10/11/2022

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

EXAMINER	
WON, MICHAEL YOUNG	

ART UNIT	PAPER NUMBER
2443	

NOTIFICATION DATE	DELIVERY MODE
10/11/2022	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):

eofficeaction@appcoll.com
pair@mb-ip.com

Office Action Summary	**Application No.** 17/161,190	**Applicant(s)** SHEMESH et al.	
	Examiner MICHAEL Y WON	**Art Unit** 2443	**AIA (FITF) 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 08 August 2022.

☐ 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) 1-7,9-23 and 25-33 is/are pending in the application.

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

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-7,9-23 and 25-33 is/are rejected.

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

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

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

Application Papers

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

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

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

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

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

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

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

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

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

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

2. This action is in response to the Amendment filed August 8, 2022.

3. Claims 1, 3, 4, 7, 9, 16-20, and 23 have been amended.

4. Claims 1-7, 9-23, and 25-33 have been examined and are pending with this action.

Response to Arguments

5. Applicant's arguments with respect to the rejection of claims 1-8, 11-24, and 27-31, previously rejected under 35 U.S.C. 102(a)(1) and 102(a)(2) as being anticipated by Prabhu et al. (US 2019/0258973), have been fully considered, but are not persuasive.

In response to the argument with respect to the amended limitations of the independent claims, Manghirmalani et al. (US Pat No. 5,819,028) herein referred to as Manghirmalani, has been cited to teach the missing limitations. Manghirmalani explicitly teaches a generic representation of network entities. See rejections below.

In response to the argument that "Prabhu's model does not relate to network entities, and specifically entities deployed in a cloud computing environment" (see Remarks, page 11), this assertion is improper and erroneous. Prabhu teaches in the **Abstract**: "*Systems and techniques for a computational unified graph hierarchy model are disclosed herein. A set of source data may be received that may include entity data and relationship data. An entity may*

be identified in the entity data. A hierarchy may be determined for the entity. An entity graph network may be generated. A non-hierarchical link between the entity and a related entity may be determined. The entity graph network may be updated to include the non-hierarchical link. A set of measures may be generated for a relational link of the entity. A dependency may be configured between the set of measures for the relational link and a second set of measures of a second relational link. A change may be identified to a value of a measure and a dependent entity node measure value may be updated based on a computational effect of the change to the value", emphasis added. Prabhu also teaches in **[0033]**: "*In some instances, a server, system, subsystem, or computing device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or cloud computing environment and share computing resources, including shared memory, processors, and interfaces*", emphasis added. Clearly, from theses teachings, the assertion above is improper.

In response to the argument with respect to claim 32 and 33, Chandrashekhar was merely to teach the implementation or application of "security rules". Manghirmalani has been cited to explicitly teach of "generic" network entities.

For at least these reasons above and the rejections set forth below, claims 1-8, 11-24, and 27-33 remain rejected and pending.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

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

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-7, 11-23, and 27-31 are rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (US 2019/0258973) in view of Manghirmalani et al. (US Pat. No.5,819,028).

INDEPENDENT:

As per **claim 1**, Prabhu teaches a method for generation of unified graph models for network entities, comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property (see Prabhu, **Abstract**: "*A set of source data may be received that may include entity data and relationship data. An entity may be identified in the entity data*"; [**0037**]: "*Moreover, the example system 200 of FIG. 2 can further include one or more additional computing devices, systems, and software-based tools (e.g., embodied on devices 115, 120, 125, 130, 135, 145, 150) communicating with modeling engine 205, for instance, over one or more networks (e.g., 140)*"; [**0039**]: "*In some instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models*"; [**0054**]: "*a dependency model can further model dependencies between computation entities*"; and [**0067**]: "*The diagram of FIG. 5C illustrates dependencies (e.g., at 550) between the measures M1-M11, as well as dependencies between computational entities C1-C5 (e.g., at 560) as defined in an example dependency model. A dependency model can provide the static information necessary to determine the set of affected computed measures for any given change to an input measure*"), wherein the plurality if network entities are deployed in

a plurality of cloud computing platforms (see Prabhu, [**0033**]: "*Servers can include any suitable software component or module, or computing device(s) capable of hosting and/or serving software applications and services (e.g., business models and modeling tools and services of the planning system 105, applications and services of application server 130, applications and services of enterprise system 135, etc.), including distributed, enterprise, or cloud-based software applications, data, and services. For instance, servers can be configured to host, serve, or otherwise manage models and data structures, data sets, software service and applications interfacing, coordinating with, or dependent on or used by other services and devices. In some instances, a server, system, subsystem, or computing device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or cloud computing environment and share computing resources, including shared memory, processors, and interfaces*");

genericizing each of the network entities based on the respective collected network entity data (see Prabhu, [**0042**]: "*The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data*");

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the generic network entities of the plurality of network entities (see Prabhu, **FIG. 5A-C**; [**0030**]: "*user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify, and analyze scenarios and business plans based on the models*"; and [**0076**]: "*Relationships between entities, member types, members (or groups (or "sets") of members), and particular member type attributes can be non-hierarchical and/or hierarchical*

and, in some instances, be organized in multi-dimensional hierarchies that allow members, member groups, and member type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency model"); and

storing the generated network graph (see Prabhu, [**0095**]: "*Plan models that are recorded and archived in the generation of scenarios can be managed, in some implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of scenarios that the system can simultaneously evaluate and compare, among other examples*").

Although Prabhu explicitly teaches generating a plurality of network entities, wherein a network entity includes a representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms (see rejections above), Prabhu does not explicitly the network entities are generic network entities, wherein a generic network entity includes a generic representation of respective network entities.

Manghirmalani teaches generic network entities, wherein a generic network entity includes a generic representation of respective network entities (see Manghirmalani, **col.1, lines 9-12**: "*The present invention relates to the field of network entities and domains; more specifically, to the generation and display of certain generic objects of a network entity or domain*"; **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format. In the currently preferred embodiment, generic objects include the health, load, error, and performance of the network. In addition, these objects can also be provided to the operator for individual devices on the network*"; and **col.9, lines 19-21**: "*The present invention addresses this problem by generating a generic object, called the "load" for the network/device*").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu in view of Manghirmalani by implementing generic network entities, wherein a generic network entity includes a generic representation of respective network entities. One would be motivated to do so because Manghirmalani teaches that such an implementation allows easy interpretation by the user (see Manghirmalani, **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format*").

As per **claim 16**, Prabhu teaches a non-transitory computer readable medium having stored thereon instructions (see Prabhu, [**0104**]: "*A computer storage medium can be a non-transitory medium*") for causing a processing circuitry to execute a process for generation of unified graph models for network entities, the process comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property (see Prabhu, **Abstract**: "*A set of source data may be received that may include entity data and relationship data. An entity may be identified in the entity data*"; [**0037**]: "*Moreover, the example system 200 of FIG. 2 can further include one or more additional computing devices, systems, and software-based tools (e.g., embodied on devices 115, 120, 125, 130, 135, 145, 150) communicating with modeling engine 205, for instance, over one or more networks (e.g., 140)*"; [**0039**]: "*In some instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models*"; [**0054**]: "*a dependency model can further model dependencies between computation entities*"; and [**0067**]: "*The diagram of FIG. 5C illustrates dependencies (e.g., at 550) between the measures M1-M11, as well as dependencies between*

computational entities C1-C5 (e.g., at 560) as defined in an example dependency model. A dependency model can provide the static information necessary to determine the set of affected computed measures for any given change to an input measure"), wherein the plurality if network entities are deployed in a plurality of cloud computing platforms (see Prabhu, [**0033**]: "*Servers can include any suitable software component or module, or computing device(s) capable of hosting and/or serving software applications and services (e.g., business models and modeling tools and services of the planning system 105, applications and services of application server 130, applications and services of enterprise system 135, etc.), including distributed, enterprise, or cloud-based software applications, data, and services. For instance, servers can be configured to host, serve, or otherwise manage models and data structures, data sets, software service and applications interfacing, coordinating with, or dependent on or used by other services and devices. In some instances, a server, system, subsystem, or computing device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or cloud computing environment and share computing resources, including shared memory, processors, and interfaces*");

genericizing each of the network entities based on the respective collected network entity data (see Prabhu, [**0042**]: "*The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data*");

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the network entities of the plurality of network entities (see Prabhu, **FIG. 5A-C**; [**0030**]: "*user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify,*

and analyze scenarios and business plans based on the models"; and [**0076**]: "*Relationships between entities, member types, members (or groups (or "sets") of members), and particular member type attributes can be non-hierarchical and/or hierarchical and, in some instances, be organized in multi-dimensional hierarchies that allow members, member groups, and member type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency model*"); and

storing the generated network graph (see Prabhu, [**0095**]: "*Plan models that are recorded and archived in the generation of scenarios can be managed, in some implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of scenarios that the system can simultaneously evaluate and compare, among other examples*").

Although Prabhu explicitly teaches generating a plurality of network entities, wherein a network entity includes a representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms (see rejections above), Prabhu does not explicitly the network entities are generic network entities, wherein a generic network entity includes a generic representation of respective network entities.

Manghirmalani teaches generic network entities, wherein a generic network entity includes a generic representation of respective network entities (see Manghirmalani, **col.1, lines 9-12**: "*The present invention relates to the field of network entities and domains; more specifically, to the generation and display of certain generic objects of a network entity or domain*"; **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format. In the currently preferred embodiment, generic objects include the health, load, error, and performance of the network. In addition, these objects can also be provided to the operator for individual devices on the network*"; and **col.9,**

lines 19-21: "*The present invention addresses this problem by generating a generic object, called the "load" for the network/device*").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu in view of Manghirmalani by implementing generic network entities, wherein a generic network entity includes a generic representation of respective network entities. One would be motivated to do so because Manghirmalani teaches that such an implementation allows easy interpretation by the user (see Manghirmalani, **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format*").

As per **claim 17**, Prabhu teaches a system for generating unified graph models for network entities, comprising:

a processing circuitry (see Prabhu, [**0038**]: "*a modeling engine 205 can include one or more processors (e.g., 230) and memory elements (e.g., 235), as well as one or more software- and/or hardware-implemented components and tools embodying functionality of the modeling engine 205*"); and

a memory, the memory containing instructions that, when executed by the processing circuitry (see Prabhu, [**0104**]: "*A computer storage medium can be a non-transitory medium*"), configure the system to:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property (see Prabhu, **Abstract**: "*A set of source data may be received that may include entity data and relationship data. An entity may be identified in the entity data*"; [**0037**]: "*Moreover, the example system 200 of FIG. 2 can further include one or more additional computing devices, systems, and software-based tools (e.g.,*

embodied on devices 115, 120, 125, 130, 135, 145, 150) communicating with modeling engine 205, for instance, over one or more networks (e.g., 140)"; [**0039**]: "*In some instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models*"; [**0054**]: "*a dependency model can further model dependencies between computation entities*"; and [**0067**]: "*The diagram of FIG. 5C illustrates dependencies (e.g., at 550) between the measures M1-M11, as well as dependencies between computational entities C1-C5 (e.g., at 560) as defined in an example dependency model. A dependency model can provide the static information necessary to determine the set of affected computed measures for any given change to an input measure*"), wherein the plurality if network entities are deployed in a plurality of cloud computing platforms (see Prabhu, [**0033**]: "*Servers can include any suitable software component or module, or computing device(s) capable of hosting and/or serving software applications and services (e.g., business models and modeling tools and services of the planning system 105, applications and services of application server 130, applications and services of enterprise system 135, etc.), including distributed, enterprise, or cloud-based software applications, data, and services. For instance, servers can be configured to host, serve, or otherwise manage models and data structures, data sets, software service and applications interfacing, coordinating with, or dependent on or used by other services and devices. In some instances, a server, system, subsystem, or computing device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or cloud computing environment and share computing resources, including shared memory, processors, and interfaces*");

genericizing each of the network entities based on the respective collected network entity data (see Prabhu, [**0042**]: "*The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data*");

generate at least a network graph, wherein the generated network graph is a multi- dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities (see Prabhu, **FIG. 5A-C**; [**0030**]: "*user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify, and analyze scenarios and business plans based on the models*"; and [**0076**]: "*Relationships between entities, member types, members (or groups (or "sets") of members), and particular member type attributes can be non-hierarchical and/or hierarchical and, in some instances, be organized in multi-dimensional hierarchies that allow members, member groups, and member type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency model*"); and

store the generated network graph (see Prabhu, [**0095**]: "*Plan models that are recorded and archived in the generation of scenarios can be managed, in some implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of scenarios that the system can simultaneously evaluate and compare, among other examples*").

Although Prabhu explicitly teaches generating a plurality of network entities, wherein a network entity includes a representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms (see rejections above), Prabhu does not explicitly the network entities are generic network entities, wherein a generic network entity includes a generic representation of respective network entities.

Manghirmalani teaches generic network entities, wherein a generic network entity includes a generic representation of respective network entities (see Manghirmalani, **col.1, lines 9-12**: "*The present invention relates to the field of network entities and domains; more specifically, to the generation and display of certain generic objects of a network entity or domain*"; **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format. In the currently preferred embodiment, generic objects include the health, load, error, and performance of the network. In addition, these objects can also be provided to the operator for individual devices on the network*"; and **col.9, lines 19-21**: "*The present invention addresses this problem by generating a generic object, called the "load" for the network/device*").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu in view of Manghirmalani by implementing generic network entities, wherein a generic network entity includes a generic representation of respective network entities. One would be motivated to do so because Manghirmalani teaches that such an implementation allows easy interpretation by the user (see Manghirmalani, **col.6, lines 9-16**: "*This piece of code reduces the data gathered by the agents into a set of common or generic objects. These common or generic objects are then displayed to the operator in an easy-to-understand format*").

DEPENDENT:

As per **claims 2 and 18**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein the network entity property relates to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration (see Prabhu, [**0048**]: "*Each of the member types 315a, 315b can respectively define a set of member-type attributes (e.g., 330a, 330b) describing features and details generally relevant to members of that type. For example, a television member type 315a can include member type attributes such as the refresh rate, screen size, and technology (e.g., LED, LCD, plasma, etc.) of a particular television (i.e., member of the television member type), including other potential television-related attributes. Similarly, a computer member type 315b, while a member type of the same business entity (e.g., Product), can have a different set of attributes corresponding to features and specifications of computers, such as processor type, processor speed, memory, hard drive, etc*").

As per **claims 3 and 19**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein genericizing each of the network entities further comprises: generating a new generic network entity, wherein the new generic network entity includes at least a network entity property of network entities (see Prabhu, [**0042**]: "*The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data*").

As per **claims 4 and 20**, which respectively depend on claims 1, and 17, Prabhu and Manghirmalani further teach wherein the new generic network entity includes at least a network entity property of the at least one network entity (see Prabhu, [**0042**]: "*The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data*").

As per **claims 5 and 21**, which respectively depend on claims 1, and 17, Prabhu further teaches further comprising: creating at least one imputed entity, wherein the at least one

imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities (see Prabhu, [**0039**]: "*In some implementations, an example model generator 240 can be included possessing functionality for creating or editing business models. In some instances, a model can be generated by instantiating an instance of a preexisting model type, model template, or class, among other examples*").

As per **claims 6 and 22**, which respectively depend on claims 5, and 21, Prabhu further teaches wherein creating at least one imputed entity comprises: identifying at least one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity (see Prabhu, [**0039**]: "*In some instances, a model can be generated by instantiating an instance of a preexisting model type, model template, or class, among other examples*").

As per **claims 7 and 23**, which respectively depend on claims 6, and 22, Prabhu and Manghirmalani further teaches wherein the generated network graph is a unified representation of the plurality of network entities including the imputed network entities and the generic network entities (see Prabhu, [**0029**]: "*The modeled relationships can include both hierarchical and non-hierarchical relationships and dependencies. Based on this capability, the framework can be used for modeling a large number of business entities and business workflows to give business users complete visibility into modeled aspects of the business workflow and scenarios*"; and **claim 1**: "*A system for representing unified graph and hierarchy relationships*").

As per **claims 11 and 27**, which respectively depend on claims 9, and 25, Prabhu further teaches wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity (see Prabhu, **FIG. 5A-C**).

As per **claims 12 and 28**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge (see Prabhu, **FIG. 3A**; and [**0040**]: "*Data storage engine 245 can store and manage measures and measure (fact) data for applicable sets of business entities models, meta data for describing and processing entities, relationships, and fact data (such as computation rules, procedures, scripts) included in the business models, among other data. Data elements can include, for examples, data elements describing domains (e.g., product domain, organization domain, etc.), attributes (e.g., products, product brands, product categories, etc.), hierarchies (e.g., Product->Brand->Category), non-hierarchical relationships (e.g., Competitor: Product=>Competitor Product), submitted and computed measures (e.g., gross or net sales for a particular market segment), facts (or measure data) (e.g., the actual values of gross sales, net sales, and other measures), and meta data (e.g., active rules, measure calculations, model logic, procedures, etc.), among other examples*").

As per **claims 13 and 29**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein storing the generated at least one network graph comprises: returning at least a visualization of the generated at least one network graph (see Prabhu, [**0040**]: "*Data managed by data storage engine 245 can be stored in-memory, on-disk, or through a combination. The data storage engine 245 can support a set of data operators allowed to access or modify the data, in some cases providing multi-user transaction support for data access, among other example functionality and features*").

As per **claims 14 and 30**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein storing the generated at least one network graph further comprises: storing the generated network graph in a graph database (see Prabhu, **FIG. 2**; and [**0040**]: "*Data managed by data storage engine 245 can be stored in-memory, on-disk, or through a*

combination. The data storage engine 245 can support a set of data operators allowed to access or modify the data, in some cases providing multi-user transaction support for data access, among other example functionality and features").

As per **claims 15 and 31**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection (see Prabhu, **FIG. 5C**).

7. Claims 9, 10, 25, and 26 are rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (US 2019/0258973) and Manghirmalani et al. (US Pat. No.5,819,028), and still further in view of Ettle et al. (US 2007/0147269).

As per **claims 9 and 25**, which respectively depend on claims 1, and 17, Prabhu and Manghirmalani do not explicitly teach wherein the generated network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

Ettle teaches wherein the generated network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity (see Ettle, [**0076**]: "*The topology search is based upon an abstract model of the network in which groups of equivalent network nodes in the underlying network model are represented as vertices in a simplified network graph (with a given vertex representing a node group), and the connectivity between these groups is represented by edges in the graph*").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu and Manghirmalani in view of Ettle so that the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity. One would be motivated to do so because vertex are routine, conventional, and widely employed in a graph representation.

As per **claims 10 and 26**, which respectively depend on claims 9, and 25, Prabhu and Manghirmalani do not explicitly teach wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

Ettle teaches the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex (see Ettle, [**0166**]: "*The route view 122 includes icons 128 representing the route nodes, labelled with node names, and circuit connections represented graphically as pipes 130 labelled with the connection type*").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu and Manghirmalani in view of Ettle so that the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex. One would be motivated to do so because vertex are routine, conventional, and widely employed in a graph representation.

8. Claims 32 and 33 are rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (US 2019/0258973) and Manghirmalani et al. (US Pat. No.5,819,028), and still further in view of Chandrashekhar et al. (US 2018/0063193).

As per **claims 32 and 33**, which respectively depend on claims 3 and 19, although Manghirmalani explicitly teaches generic network entity (see independent claim rejections above), Prabhu and Manghirmalani do not explicitly teach wherein the generic network entity represents at least an entity configured to apply security rules.

Chandrashekhar teaches represenling at least an entity configured to apply security rules (see Chandrashekhar, [**0098**]: "*The control agent 170 uses this data to configure the MFE 175 to apply networking and/or security rules to packet sent to and from the workload application 165, similar to how the local controller 120 configures the MFEs 130*").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu and Manghirmalani in view of Chandrashekhar so that the generic network entity represents at least an entity configured to apply security rules. One would be motivated to do so because Prabhu teaches in paragraph [**0028**], "*Accordingly, such plan models can be used to coordinate the efforts of various portions of an organization directed to different goals to optimize the activities of an organization*", emphasis added, wherein security is a vital element of any organization.

Conclusion

9. For the reasons above, claims 1-31 have been rejected and remain pending.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL Y WON whose telephone number is (571)272-3993. The examiner can normally be reached on Wk.1: M-F: 8-5 PST & Wk.2: M-Th: 8-7 PST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is

encouraged to use the USPTO Automated Interview Request (AIR) at

http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nicholas R Taylor can be reached on 571-272-3889. 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.

/Michael Won/
Primary Examiner, Art Unit 2443

Notice of References Cited	Application/Control No. 17/161,190	Applicant(s)/Patent Under Reexamination SHEMESH et al.	
	Examiner MICHAEL Y WON	Art Unit 2443	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-5819028-A	10-1998	Manghirmalani; Ravi	H04L41/046	709/224
*	B	US-20020147715-A1	10-2002	Beyer, David Paul	H04L41/022	707/999.005
*	C	US-20200050689-A1	02-2020	Tal; Hail	G06F16/23	1/1
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

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.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	Art Unit
	MICHAEL Y WON	2443

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	12/17/2021	04/01/2022	10/04/2022						
	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	✓	✓	✓						
	32		✓	✓						
	33		✓	✓						

IPR2025-01084
Orca Security EX1002 Page 217

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	Art Unit
	MICHAEL Y WON	2443

CPC - Searched*		
Symbol	Date	Examiner
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	12/16/2021	MW
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	10/04/2022	MW

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
PE2E SEARCH	12/16/2021	MW
INVENTOR/ASSIGNEE SEARCH	12/16/2021	MW
NPL SEARCH: DIALOG	12/17/2021	MW
PE2E SEARCH	10/04/2022	MW
NPL SEARCH: DIALOG	10/04/2022	MW

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

IPR2025-01084
Orca Security EX1002 Page 218

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	201700	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:27 PM
L2	60	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND genericiz$5	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:42 PM
L3	0	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND genericiz$5 AND (collect$4 OR gather$4 OR retriev$4) near10 characteristics AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:46 PM
L4	0	genericiz$5 AND (collect$4 OR gather$4 OR retriev$4) near10 characteristics AND	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU,	OR	ON	ON	2021/12/16 01:52 PM

		generat$4 near10 network near4 graph	CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L5	1	genericiz$5 AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:53 PM
L6	0	genericiz$5 near5 (collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:54 PM
L7	7	genericiz$5 near5 (collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN,	OR	ON	ON	2021/12/16 01:54 PM

IPR2025-01084
Orca Security EX1002 Page 220

			WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L8	35	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:58 PM
L9	6	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph near10 relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:03 PM
L10	2	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 (network near6 graph OR topology) near10 relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:04 PM
L11	81694	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2021/12/16 02:07 PM

IPR2025-01084
Orca Security EX1002 Page 221

			EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L12	4673	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:07 PM
L13	1967	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional AND stor$4 near6(graph OR model)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:08 PM
L14	1794	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO;	OR	ON	ON	2021/12/16 02:09 PM

IPR2025-01084
Orca Security EX1002 Page 222

			JPO; DERWENT; IBM_TDB)				
L15	327	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:09 PM
L16	143	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR generic)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:10 PM
L17	221	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:10 PM
L18	153	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:11 PM

IPR2025-01084
Orca Security EX1002 Page 223

		dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw))					
L19	143	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw)) AND network near4 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:22 PM
L20	116	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw)) AND network near4 (device OR node OR entity OR module) AND (device OR node OR entity OR module) near3 (class OR type OR category OR configuration)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:24 PM
L21	164301	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) topolog$5 near5 network	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:31 PM
L22	1330	generat$4 near10	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16

		(network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 network					08:31 PM
L23	104489	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 networkand multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:33 PM
L24	110	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 network AND multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:33 PM
L25	532	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:38 PM
L26	422	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:38 PM

		OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24					
L27	230	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:39 PM
L28	112	topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM
L29	3986517	network near6topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM
L30	57	network near6 topology AND (discover$4 OR generat$4) near10	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM

		(network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24					
L31	1254	network near6 topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:54 PM
L32	18	network near6 topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:55 PM
L33	8	network near6 topology AND network near6 discovery AND (generat$4) near6 (graph OR model OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:00 PM

		node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)					
L34	10466718	(creat$5 OR generat$5)network near6 topology AND network near6 discovery AND (graph OR model OR topology) near6 network AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:03 PM
L35	0	(creat$5 OR generat$5) near5 network near6 topology AND network near6 discovery AND (graph OR model OR topology) near6 network AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:03 PM
L36	2194	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:05 PM
L37	179	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:06 PM

		model) near5 (user OR client) AND (multidimensional OR multi-dimensional)					
L38	1261503	collect	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:10 PM
L39	156	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client) AND (multidimensional OR multi-dimensional) AND (collect$4 OR gather$4 OR receiv$5 OR retriev$4) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:13 PM
L40	165	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client) AND (multidimensional OR multi-dimensional) AND (collect$4 OR gather$4 OR receiv$5 OR retriev$4 OR captur$4) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:14 PM
L41	2457290	convert	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 10:20 PM
L42	17228	(model) WITH vertex WITH (entity OR device OR node OR module)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2021/12/17 12:24 AM

			IBM_TDB)				
L43	398	(model) WITH vertex WITH network near2 (entity OR device OR node OR module)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/17 12:24 AM
L44	39	(model) WITH vertex WITH network near2 (entity OR device OR node OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/17 12:25 AM
L45	2	"20180024981" "20200322227"	(US-PGPUB)	OR	ON	ON	2022/04/01 12:08 PM
L46	2	"20190258973" "20070147269"	(US-PGPUB)	OR	ON	ON	2022/04/01 12:10 PM
L47	670	generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:23 PM
L48	13	generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO;	OR	ON	ON	2022/04/01 12:25 PM

IPR2025-01084
Orca Security EX1002 Page 230

			JPO; DERWENT; IBM_TDB)				
L49	3	generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/01 12:25 PM
L50	121	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:53 PM
L51	0	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:53 PM
L52	25	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND security	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL,	OR	ON	ON	2022/04/01 02:33 PM

IPR2025-01084
Orca Security EX1002 Page 231

		near4 protocol	PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L53	2	provisioning AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:47 PM
L54	1638	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:49 PM
L55	221	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:50 PM
L56	177	(H04L43/045 OR G06F16/9024 OR	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2022/04/01 02:50 PM

		H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule AND topology	AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L57	159	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule AND topology	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/01 02:50 PM
L58	20	generat$5 WITH generic near3 network near3 (entities OR devices OR components)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/08/04 01:25 PM
L59	0	(neutral OR general OR generic OR basic) near4 representation near10 network near2 (entitites OR nodes OR components OR devices) AND plurality near5 cloud	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 01:41 PM
L60	4	generat$5 near10 (graph OR model) AND (neutral OR general OR generic OR basic) near4 representation AND network near2 (entitites OR nodes OR components OR devices) WITH graph AND plurality near5 cloud	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 01:42 PM
L61	2400375	node	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 01:49 PM
L62	24	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (generic OR basic OR generic OR plain) near4	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 04:58 PM

		represent$6 near6 network near4 (device OR component OR entit$4 OR node)					
L63	24	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain)	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 04:59 PM
L64	22	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND (generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model WITH network	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:50 PM
L65	132	(generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model WITH network	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:50 PM
L66	110	(generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model WITH network NOT L64	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:51 PM
L67	38	(generic OR basic OR generic OR plain) near4 represent$6 near6 network near4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND	(US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/10/04 05:57 PM

		model WITH network NOT L64 AND clouds					

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

Dialog®

STIC
Scientific and Technical Information Center

Search Strategy from Dialog

October 04 2022 18:08

IPR2025-01084
Orca Security EX1002 Page 236

Search Strategy

Databases: ABI/INFORM® Professional Advanced, Abstracts in New Technology & Engineering, AdisInsight: Drugs, AdisInsight: Trials, Adis Pharmacoeconomics & Outcomes News, AGRICOLA, AGRIS, Allied & Complementary Medicine™, Analytical Abstracts, APA PsycInfo®, Aqualine, Aquatic Science & Fisheries Abstracts (ASFA), Australian Education Index, BIOSIS® Toxicology, BIOSIS Previews®, British Library Inside Conferences, British Nursing Index, Business & Industry, CAB ABSTRACTS, Chemical Business Newsbase, Chemical Engineering & Biotechnology Abstracts, Chemical Safety Newsbase, Civil Engineering Abstracts, ClinicalTrials.gov, Current Contents® Search, Derwent Drug File, Derwent Drug Registry, DH-DATA: Health Administration, Medical Toxicology & Environmental Health, DIOGENES® FDA Regulatory Updates, Drug Information Fulltext, Earthquake Engineering Abstracts, EconLit, Ei Compendex®, Ei EnCompassLIT, Embase®, Embase® French Local Literature, Embase Preprints, EMCare®, ERIC, ESPICOM Pharmaceutical & Medical Device News, FDAnews, FLUIDEX (Fluid Engineering Abstracts), Foodline®: MARKET, Foodline®: PRODUCT, Foodline®: SCIENCE, FSTA®, Gale Group Computer Database™, Gale Group Health Periodicals Database, Gale Group New Product Announcements / Plus®, Gale Group Newsletter Database™, Gale Group PharmaBiomed Business Journals, Gale Group PROMT®, Gale Group Trade & Industry Database™, GEOBASE, GeoRef, Global Health, HSELINE: Health and Safety, ICONDA - International Construction Database, IMS Company Profiles, IMS New Product Focus, IMS Pharma Trademarks, IMS R&D Focus, IMS R&D Focus Drug News, Inspec®, International Pharmaceutical Abstracts, Jane's Defense & Aerospace News, King's Fund, KOSMET: Cosmetic Science, Lancet Titles, Mechanical & Transportation Engineering Abstracts, MEDLINE®, Meteorological & Geoastrophysical Abstracts, Morressier Life Science Conference Abstracts and Posters, New England Journal of Medicine, Northern Light Life Sciences Conference Abstracts, NTIS: National Technical Information Service, Oceanic Abstracts, PAIS International, Paperbase, PAPERCHEM, ProQuest Advanced Tech & Aerospace Professional, ProQuest Biological & Health Science Professional, ProQuest Dissertations and Theses Professional, ProQuest Environmental Science Professional, ProQuest Materials Research Professional, ProQuest Newsstand Professional, ProQuest Technology Research Professional, Prous Science Daily Essentials, Prous Science Drug Data Report, Prous Science Drugs Of The Future™, Publicly Available Content, Registry of Toxic Effects of Chemical Substances (RTECS®), SciSearch®: a Cited Reference Science Database, Social SciSearch®, ToxFile®, Transport Research International Documentation, TULSA™ (Petroleum Abstracts), UBM Computer Full Text, Weldasearch®, Zoological Record

Set#	Searched for	Results
S1	(provision$5 AND cloud AND security near/4 (rule or policy))	79492*
S2	(provision$5 AND cloud AND security near/4 (rule or policy) and topology)	3293°
S3	(provision$5 AND cloud AND security near/4 (rule or policy) and generat$6 near/15 network near/3 model)	152°
S4	(provision$5 AND cloud AND security near/4 (rule or policy) and generat$6 near/15 (network near/3 model or topolog$6))	427°
S5	(provision$5 AND cloud AND security near/4 (rule or policy) and generat$6 near/15 (network near/3 model or topolog$6)) and (generic OR basic OR generic OR plain) near/4 represent$6 near/6 network	5°
S6	(generic OR basic OR generic OR plain) near/4 represent$6 near/6 network near/4 (device OR component OR entit$4 OR node)	332°
S7	(generic OR basic OR generic OR plain) near/4 represent$6	264°

	near/6 network near/4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model near/15 network	
S8	(generic OR basic OR generic OR plain) near/4 represent$6 near/6 network near/4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model near/15 network and cloud	38°
S9	(generic OR basic OR generic OR plain) near/4 represent$6 near/6 network near/4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model near/15 network and clouds	38°
S10	(generic OR basic OR generic OR plain) near/4 represent$6 near/6 network near/4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model near/15 network and clouds and model	38°
S11	(generic OR basic OR generic OR plain) near/4 represent$6 near/6 network near/4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model near/15 network and clouds and model and security	20°
S12	(generic OR basic OR generic OR plain) near/4 represent$6 near/6 network near/4 (device OR component OR entit$4 OR node) AND (generic OR basic OR generic OR plain) AND model near/15 network and clouds and model and security and provision$4	8°

* Duplicates are removed from the search, but included in the result count.

° Duplicates are removed from the search and from the result count.

IPR2025-01084
Orca Security EX1002 Page 238

Contact ProQuest
Copyright © 2022 ProQuest LLC. All rights reserved. - **Terms and Conditions**

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.
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	6419

122066 7590 08/10/2022

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

EXAMINER	
WON, MICHAEL YOUNG	

ART UNIT	PAPER NUMBER
2443	

NOTIFICATION DATE	DELIVERY MODE
08/10/2022	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):

eofficeaction@appcoll.com
pair@mb-ip.com

Applicant-Initiated Interview Summary	**Application No.** 17/161,190	**Applicant(s)** SHEMESH et al.		
	Examiner MICHAEL Y WON	**Art Unit** 2443	**AIA (First Inventor to File) Status** Yes	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
MICHAEL Y WON	Primary Examiner	Telephonic
Michael Ben-Shimon (Reg. No. 69,610)	Attorney of Record	

Date of Interview: 04 August 2022

Issues Discussed:

Proposed Amendment(s)

Applicant proposed an amendment. Examiner expressed the amendment will overcome the current prior art rejection. No further specific agreement was reached.

/Michael Won/ Primary Examiner, Art Unit 2443	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

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

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

IPR2025-01084
Orca Security EX1002 Page 241

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

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

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

Application Number	17/161,190	Filing Date	2021-01-28	Docket Number (if applicable)	WZIO P1933	Art Unit	2443
First Named Inventor	Daniel Hershko SHEMESH			Examiner Name	WON, Michael Young		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

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

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

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

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

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 506438

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

IPR2025-01084
Orca Security EX1002 Page 242

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

Signature of Registered U.S. Patent Practitioner			
Signature	/Michael Ben-Shimon/	Date (YYYY-MM-DD)	2022-08-08
Name	Michael Ben-Shimon	Registration Number	69610

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

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

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

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

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

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IPR2025-01084
Orca Security EX1002 Page 244

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Daniel Hershko SHEMESH et al.
Serial No:	17/161,190
Filed:	January 28, 2021
Docket No.:	WZIO P1933
Examiner:	WON, MICHAEL YOUNG
Art Unit:	2443
Confirmation No.:	6419

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

AMENDMENT UNDER 37 C.F.R. §1.114

Sir:

Applicants hereby petition for a one (1) month extension of time, thereby extending the date of response to the non-final Office Action dated **April 6, 2022,** the required fee being paid through the EFS.

In support of an RCE (Request for Continued Examination) filed herewith and in response to the final Office Action dated **April 6, 2022**, the following amendments and remarks are hereby submitted. Reconsideration of the application is respectfully requested.

Interview Summary begins on page **2** of this paper.
Amendments to the claims begin on page **3** of this paper.
Remarks begin on page **9** of this paper.

STATEMENT REGARDING SUBSTANCE OF INTERVIEW

Applicants submit that an interview occurred on August 4, 2022 with Applicants' representative, Michael Ben-Shimon, and Examiner Won. Applicants appreciate the courtesies extended during the interview. During the interview, Applicants' representative discussed the amendments to claim 1, as presented in the current set of claims submitted herewith. Examiner Won agreed that the proposed amendments, substantially included in this amendment, overcome the applied references. Examiner Won also agreed to call Applicants' representative to resolve any remaining issues if the application is not in condition for allowance.

IPR2025-01084
Orca Security EX1002 Page 246

AMENDMENTS TO THE CLAIMS

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

1. (Currently Amended) A method for generation of unified graph models for network entities, comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the generic network entities of the plurality of network entities; and

storing the generated ~~at least a~~ network graph.

2. (Previously Presented) The method of claim 1, wherein the network entity property relates to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration.

3. (Currently Amended) The method of claim 1, wherein genericizing each of the network entities further comprises:

generating a new generic network entity, wherein the new generic network entity includes at least a network entity property of ~~the at least one~~ network ~~entity~~ entities.

4. (Currently Amended) The method of claim 1, ~~wherein genericizing each of the network entities further comprises:~~

~~converting the at least one network entity into a new generic network entity,~~ wherein the new generic network entity includes at least a network entity property of the at least one network entity.

5. (Original) The method of claim 1, further comprising:

creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities.

6. (Previously Presented) The method of claim 5, wherein creating at least one imputed entity comprises:

identifying at least one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity.

7. (Currently Amended) The method of claim [[1]] 6, wherein the generated network graph is a unified representation of the plurality of network entities including the imputed network entities and the generic network entities.

8. (Cancelled)

9. (Currently Amended) The method of claim 1, wherein the generated ~~at least a~~ network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

10. (Original) The method of claim 9, wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

11. (Original) The method of claim 9, wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity.

12. (Original) The method of claim 11, wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge.

13. (Previously Presented) The method of claim 1, wherein storing the generated network graph further comprises:

returning at least a visualization of the generated at least one network graph.

14. (Previously Presented) The method of claim 1, wherein storing the generated at network graph further comprises:

storing the generated network graph in a graph database.

15. (Original) The method of claim 1, wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection.

16. (Currently Amended) A non-transitory computer readable medium having stored thereon instructions for causing a processing circuitry to execute a process for generation of unified graph models for network entities, the process comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of generic network entities and relations between the network entities of the plurality of network entities; and

storing the generated ~~at least a~~ network graph.

17. (Currently Amended) A system for generating ~~generation of~~ unified graph models for network entities, comprising:

a processing circuitry; and

a memory, the memory containing instructions that, when executed by the processing circuitry, configure the system to:

collect, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericize each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

generate at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and

store the generated ~~at least a~~ network graph.

18. (Currently Amended) The system of claim 17, wherein the network entity property relates ~~relating~~ to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration.

19. (Currently Amended) The system of claim 17, wherein the system is further configured to:

generate a new generic network entity, wherein the new generic network entity includes at least a network entity property of ~~the at least one~~ network ~~entity~~ entities.

20. (Currently Amended) The system of claim 17, ~~wherein the system is further configured to:~~

~~convert the at least one network entity into a new generic network entity,~~ wherein the new generic network entity includes at least a network entity property of the at least one network entity.

21. (Original) The system of claim 17, wherein the system is further configured to:

create at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities.

22. (Previously Presented) The system of claim 21, wherein the system is further configured to:

identify at least one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity.

23. (Currently Amended) The system of claim [[17]] 22, wherein the generated network graph is a unified representation of the plurality of network entities including the imputed network entities and the generic network entities.

24. (Cancelled)

25. (Original) The system of claim 17, wherein the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

26. (Original) The system of claim 25, wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

27. (Original) The system of claim 25, wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity.

28. (Original) The system of claim 27, wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge.

29. (Previously Presented) The system of claim 17, wherein the system is further configured to:

return at least a visualization of the network graph.

30. (Original) The system of claim 17, wherein the system is further configured to:

store the generated network graph in a graph database.

31. (Original) The system of claim 17, wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection.

32. (Previously Presented) The method of claim 3, wherein the generic network entity represents at least an entity configured to apply security rules.

33. (Previously Presented) The system of claim 19, wherein the generic network entity represents at least an entity configured to apply security rules.

REMARKS

In the Final Office Action dated April 6, 2022, it is noted that claims 1-7, 9-23, and 25-33 are pending. Claims 1-7, 11-23, and 27-31 stand rejected under 35 USC 102; claims 9-10, 25-26, and 32-33 stand rejected under 35 USC 103. By this amendment, various claims have been amended. By the foregoing amendments, no new matter has been added.

Claim Rejections under 35 USC 102

Claims 1-7, 11-23, and 27-31 stand rejected under 35 U.S.C. 102(a)(1) and 102(a)(2) as being anticipated by Prabhu et al. (U.S. 2019/0258973), hereinafter "Prabhu." Applicants respectfully disagree and traverse the rejection.

Applicants avoid this ground of rejection for the following reasons.

Independent Claim 1 and dependent Claims 2-7 and 11-15

Independent claim 1 recites (emphasis added):

> genericizing each of the network entities based on the respective collected network entity data to generate a plurality of generic network entities, wherein a generic network entity includes a generic representation of respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;
> generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of **generic network entities** and relations between the **generic network entities** of the plurality of network entities.

Support for the amendments can be found at least in paragraphs [0047], [0048], and [0057] of the present application.

The amendments clarify that the network graph is generated from **generic network entities** representing different network entities from different cloud computing platforms in a cloud computing environment. There is simply **nothing** like this taught or suggested by Prabhu. Thus, Prabhu does **not** appear to teach the features of amended Applicants' claim 1.

Prabhu discloses a method for creating a computational unified graph hierarchy model. Prabhu's method requires receiving a source data set that may include entity data and relationship data designating the entity and a hierarchy; determining a non-hierarchical link between the entity and a related entity, and updating a graph network to include the non-hierarchical link. Prabhu's method further requires performing a set of measures for a relational link of the entity and configuring a dependency between the relational links based on the set of measures. *See Prabhu Abstract*.

Although Prabhu discusses creating a computational unified graph hierarchy model, such a model includes business entities. Prabhu's model does not relate to network entities, and specifically network entities deployed in a cloud computing environment, as required in Applicants' claim 1.

For example, Figs. 5A-5C and paragraph [0052] of Prabhu show a hierarchy model of business entities corresponding to all **products** currently offered by a particular company. *See also Prabhu's paragraph [0075]* which states the model is created for business entities, such as regions, organizations, persons, products, product categories, market regions, market segments, channels, calendar periods, time, locations, customers, suppliers, factories, and so on.

The Office action, page 2, asserts:

> With respect to a business entity, Prabhu is simply providing an example of use (i.e., utility) and does not intend to limit the entity to only business elements since Prabhu teaches in paragraph *[**0054**], "a dependency model can further model dependencies between computation entities", and [**0067**], "The diagram of FIG. 5C illustrates dependencies (e.g., at 550) between the measures M1-M11, as well as dependencies between computational entities C1-C5 (e.g., at 560) as defined in an example dependency model. A dependency model can provide the static information necessary to determine the set of affected computed measures for any given change to an input measure."*

The Office Action equates "computational entities" of Prabhu to the claimed "network entities." Applicants disagree and note that computational entities are **not, network** entities deployed in a cloud computing environment and specifically do **not**

perform network activities in such environments. As shown in Fig. 4 of Prabhu, model 250 shows dependencies between **computational entities** (e.g., **435**) used to compute one or more of the measures. That is, the function of a computational entity is to compute "one or more measures." Prabhu does **not** teach what the "measure" is, and how "measure" can be related to any networking in cloud computing environments, as required by Applicants Claim 1.

Further, Prabhu's Fig. 5C shows dependencies between computational entities. Looking at Fig. 5A, the dependencies are of model business entities, such as Cereals member type (504), a Snack member type (506), and the like. In contrast, claim 1 requires processing data related to a plurality of network entities **deployed** in cloud computing platforms.

Although Applicants disagree with the assertions made in the Office action, Applicants have elected to further amend claim 1 to advance prosecution. Claim 1 now requires:

> wherein a generic network entity includes a generic representation of a respective network entities from different cloud computing platforms of the plurality of cloud computing platforms;

Nothing in Prabhu remotely suggests genericizing network entities. Even, arguendo, following the Office Action's logic (equating network entities to computational entities), which Applicants disagree with, there is **no** suggestion in Prabhu to generalize computational entities. The Examiner agrees that the above-cited claimed features are not disclosed by Prabhu.

As Prabhu does **not** teach genericizing of network entities, Prabhu fails to provide a network graph representing generic network entities. That is, Prabhu does **not** teach or suggest the claimed features of:

> wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of **generic network entities** and relations between the **generic network entities** of the plurality of network entities.

Applicants previously argued that Prabhu does **not** teach or suggest the modeling **network** entities deployed in the *cloud computing platforms* as called for in claim 1,

In response, the Office Action asserts:

> Prabhu further teaches in paragraph ***[0033]***, *"In some instances, a server, system, subsystem, or* computing *device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or cloud computing environment and share computing resources, including shared memory, processors, and interfaces" (emphasis added)*. The teachings above explicitly discloses, teaches, or in the very least suggests, "network entities deployed in the cloud computing platforms" as argued.

Applicants disagree and submit that the question here is not where the system that performs the modeling resides, but where the entities to be modeled are deployed. The Office action cites paragraph [0033] of Prabhu, but ignores paragraph [0031] of the reference, which states:

> a computing system 100 including a planning system 105 **capable of generating, maintaining, and serving** a plurality of business models to potentially several different clients for use in planning and other business activities.

That is, the planning system of Prabhu, which may be deployed in the cloud, generates the business models, but such a system is not being modeled. That is, Prabhu does not provide a graph representation of the planning system, but of business entities **not** deployed in the cloud. Thus, Prabhu does not disclose modeling **network** entities deployed in the cloud computing platforms, as required by Applicant's claim 1.

Applicants note that the test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. § 102, is whether the reference discloses all the elements of the combination in the claim or the mechanical equivalents, therefore functioning in substantially the same way to produce substantially the same results. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102:

Anticipation requires the presence of a single prior art reference disclosure of **each and every element** of the claims. Therefore, if the cited reference does **not** disclose each and every element of a claim, then the cited reference fails to anticipate the claim and, thus, the claim is distinguishable over the cited reference.

In view of the foregoing, Prabhu does **not** appear to teach all the elements of Applicants' claim 1. As such, Prabhu can**not** teach any of the Applicants' dependent claims, which depend from claim 1.

Thus, Applicants' claims 1, 2-7 and 11-15, which depend thereon, are allowable over Prabhu under 35 U.S.C. §102. Withdrawal of this rejection is respectfully requested.

Independent claims 16 and 17 dependent claims 18-24, and 27-31

Independent claims 16 and 17 stand rejected for substantially similar reasons as in claim 1. Accordingly, the above arguments are therefore essentially repeated, *mutatis mutandis*, and applied to claims 16 and 17. Thus, claims 16 and 17, as well as claims 18-23 and 27-31, which depend on claim 17, are likewise allowable.

Withdrawal of these rejections is respectfully requested.

Claim Rejections under 35 USC 103

Claims 9-10 and 25-26 stand rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (U.S. 2019/0258973) in view of Ettle et al. (U.S. 2007/0147269).

Given that these rejections of dependent claims are based on the combination of Prabhu and Ettle, these claims are allowable at least for the same reasons given hereinabove with regard to the respective independent claim from which they depend as the additional reference, Ettle, is cited as curing the above-described deficiencies of Prabhu. Withdrawal of these rejections is respectfully requested.

Claim Rejections under 35 USC 103

Claims 32 and 33 stand rejected under 35 U.S.C. 103 as being unpatentable over Prabhu in view of Chandrashekhar et al. (U.S. 2018/0063193).

Each of claims 32 and 33 requires that (emphasis added):

> the generic network entity represents at least an entity configured to apply security rules.

The Office Action, page 17, asserts:

> Chandrashekhar teaches wherein the generic network entity represents at least an entity configured to apply security rules (see Chandrashekhar, [0098]: "The control agent 170 uses this data to configure the MFE 175 to apply networking and/or security rules to packet sent to and from the workload application 165, similar to how the local controller 120 configures the MFEs 130").

Chandrashekhar does **not** teach the claimed features. In Chandrashekhar, an agent is installed in each VM (VIRTUAL MACHINE). The agent applies security rules. Each of claims 32 and 33 does **not** require the generic network entity to apply a rule. Instead, the claimed generic network entity provides a representation of a network element configured to perform such an operation. Therefore, Chandrashekhar does **not** teach, show, or suggest the features of claims 32-33.

Applicant further submits that the rejections of dependent claims 32 and 33 are based on the combination of Prabhu and Chandrashekhar, these claims are allowable at least for the same reasons given hereinabove with regard to the respective independent claim from which they depend as the additional reference, Chandrashekhar, is cited as curing the above-described deficiencies of Prabhu. Withdrawal of these rejections is respectfully requested.

CONCLUSION

Having fully addressed the Office Action's rejections, it is believed that, in view of the preceding remarks, this application stands in condition for allowance. Accordingly, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the Applicants' representative at (908) 274-3111, so that a mutually convenient date and time for a telephonic interview may be scheduled.

Any fee due this paper may be charged to, or overpayment credited to, deposit account **50-6438.**

Respectfully submitted,
M&B IP Analysts, L.L.C.

/Michael Ben-Shimon/
Michael Ben-Shimon
Reg. No.: 69,610

Mail all correspondence to:
CUSTOMER NO.: 122066

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	**08/08/2022 04:23:33 PM ET**	**WZIO P1933**

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Chelsea Wuesthoff
PATENT CENTER #	60851735	FILING DATE	01/28/2021
CUSTOMER #	122066	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Michael Ben-Shimon

Documents

TOTAL DOCUMENTS: 5

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
WZIO_P1933_rce_20220808-.pdf		3	Request for Continued Examination (RCE)	75 KB
Warning: This is not a USPTO supplied RCE fillable form. Data in the form cannot be automatically loaded to other USPTO systems.				
WZIO_P1933_foa_response_dated_20220406_20220808-.pdf		16	-	208 KB
WZIO_P1933_foa_response_dated_20220406_20220808--A.NE.pdf	(1-1)	1	Response After Final Action	136 KB

WZIO_P1933_foa_response_dated_20220406_20220808--INTRVIEW.APP.pdf	(2-2)	1	Applicant summary of interview with examiner	68 KB
WZIO_P1933_foa_response_dated_20220406_20220808--CLM.pdf	(3-9)	7	Claims	80 KB
WZIO_P1933_foa_response_dated_20220406_20220808--REM.pdf	(10-16)	7	Applicant Arguments/Remarks Made in an Amendment	118 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
WZIO_P1933_rce_20220808-.pdf	82152E00F122CC6DABFF6CCEA1E38EBF4F4C99C30E26E2C392E595FBD8D4BC494B36E4739FA83CFC3483654FBFE409179B1F371600104F929DCA3E1B908EF9C8
WZIO_P1933_foa_response_dated_20220406_20220808-.pdf	469AAFBE6FB5CC9B503DF5B9594C0960E7406566A315DE1DB249BA3AE6B92B1A7CFE2758A6D3F6749B93FBC42A01EF72197BB7D3587CA9A8B6A87C86E4BD27EC
WZIO_P1933_foa_response_dated_20220406_20220808--A.NE.pdf	068548DDDDADA792F0B4D2DAC678B41B5DDB4195F39323FDFEB06E41012877CF16D27199C30FD9F5862C81C08E67125CA94FF9BF5A5F1CDF59051FDDA9906743
WZIO_P1933_foa_response_dated_20220406_20220808--INTRVIEW.APP.pdf	03391E69A768B4236747D0B502E0CF967BDC45B2CF91D4734DE75908CF2CB1AEABA0E8EC768A24956A8694C98AF4D5EE40CA0E5EFEA1A2AC96C55AD94775FE8D
WZIO_P1933_foa_response_dated_20220406_20220808--CLM.pdf	738972758D34B3516E379784C02A3647F77F8D3E9679E9D5E631B26716BAAF17516C73E237FD74F177955D97F9706AB2FA9E02445112461A7E51BD5165EFFB03
WZIO_P1933_foa_response_dated_20220406_20220808--	55335071579D4F374946FE88B7BD6D2F8A757FC5CA460D66DCADCDD1435942443C96422F5792B23E975385828AD644000D3

REM.pdf 42934A279069EC23892B5708C97D8

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	08/08/2022 04:23:33 PM ET	WZIO P1933

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Chelsea Wuesthoff
PATENT CENTER #	60851735	AUTHORIZED BY	Michael Ben-Shimon
CUSTOMER #	122066	FILING DATE	01/28/2021
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 8738	E202288G24411321	Chelsea Wuesthoff

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
2251	EXTENSION FOR RESPONSE WITHIN FIRST MONTH	110.00	1	110.00
2801	REQUEST FOR CONTINUED EXAMINATION (RCE) - 1ST REQUEST (SEE 37 CFR 1.114)	680.00	1	680.00
			TOTAL AMOUNT:	$790.00

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 17/161,190	Filing Date 01/28/2021	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $240 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	08/08/2022	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 31	Minus	** 31	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $240 =	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

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ 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.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/PEARLIE A FENNELL/
*** 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.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	6419

122066 7590 04/06/2022

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

EXAMINER	
WON, MICHAEL YOUNG	

ART UNIT	PAPER NUMBER
2443	

NOTIFICATION DATE	DELIVERY MODE
04/06/2022	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):

eofficeaction@appcoll.com
pair@mb-ip.com

Office Action Summary	**Application No.** 17/161,190	**Applicant(s)** SHEMESH et al.	
	Examiner MICHAEL Y WON	**Art Unit** 2443	**AIA (FITF) 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 23 March 2022.

☐ 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) 1-7,9-23 and 25-33 is/are pending in the application.

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

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-7,9-23 and 25-33 is/are rejected.

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

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

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

Application Papers

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

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

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

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

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

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

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

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

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

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

2. This action is in response to the Amendment filed March 23, 2022.

3. Claims 1-4, 6, 13, 14, 16-18, 22, and 29 have been amended, claims 8 and 24 have been cancelled, and new claims 32 and 33 have been added.

4. Claims 1-7, 9-23, and 25-33 have been examined and are pending with this action.

Response to Arguments

5. Applicant's arguments with respect to the rejection of claims 1-8, 11-24, and 27-31, previously rejected under 35 U.S.C. 102(a)(1) and 102(a)(2) as being anticipated by Prabhu et al. (US 2019/0258973), have been fully considered, but are not persuasive.

In response to the argument that Prabhu fails to teach "network entities", because Prabhu teaches "business entities", the examiner disagrees. The reasoning behind this logic is erroneous. With respect to a business entity, Prabhu is simply providing an example of use (i.e., utility) and does not intend to limit the entity to only business elements since Prabhu teaches in paragraph ***[0054]***, *"a dependency model can further model dependencies between computation entities", and* ***[0067]***, *"The diagram of FIG. 5C illustrates dependencies (e.g., at 550) between the measures M1-M11, as well as dependencies between computational entities C1-C5 (e.g., at 560) as defined in an example dependency model. A dependency model can*

provide the static information necessary to determine the set of affected computed measures for any given change to an input measure" (emphasis added).

Clearly, a business entity can be a computational entity and a computational entity that establishes a network communication can be construed as a network entity since Prabhu explicitly teaches in paragraph ***[0037]**, "Moreover, the example system 200 of FIG. 2 can further include one or more additional computing devices, systems, and software-based tools (e.g., embodied on devices 115, 120, 125, 130, 135, 145, 150) communicating with modeling engine 205, for instance, over one or more networks (e.g., 140)".*

In response to the argument that Prabhu does not explicitly a cloud environment and therefore, fails to teach the claim limitations, the examiner disagrees.

Prabhu teaches cloud computing environment, as evidenced by the applicant(s) statement, "Applicant notes Prabhu specification mentions "cloud computing environment" as stock language describing an example of implementation of a computing system" (see Remarks, page 9). Prabhu further teaches in paragraph ***[0033]**, "In some instances, a server, system, subsystem, or computing device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or cloud computing environment and share computing resources, including shared memory, processors, and interfaces" (emphasis added).* The teachings above explicitly discloses, teaches, or in the very least suggests, "network entities deployed in the cloud computing platforms" as argued.

The distinction of a particular network in which the claimed invention operates, is merely the utility of the invention and does not patentably distinguish the invention because the functionality as claimed remains the same whether it is one network versus another. There is nothing in the language of the claims to limit the steps to only a cloud computing environment and can operate the same with any network entity (computational or not). Furthermore, independent claim can be construed to be broad enough, as to assert that the steps are

performed by person with a pen, a paper, and perhaps a filing cabinet, much less a device performing steps in a cloud environment.

During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification. See In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Furthermore, while the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. See In re American Academy of Science Tech Center, F.3d 2004 WL 1067528 (Fed. Cir. May 13, 2004).

For at least these reasons above and the rejections set forth below, claims 1-8, 11-24, and 27-33 remain rejected and pending.

Claim Rejections - 35 USC § 102

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

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.
>
> (a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

6. Claim(s) 1-7, 11-23, and 27-31 is/are rejected under 35 U.S.C. 102(a)(1) and 102(a)(2) as being anticipated by Prabhu et al. (US 2019/0258973).

INDEPENDENT:

As per **claim 1**, Prabhu teaches a method for generation of unified graph models for network entities, comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property *(see Prabhu, **Abstract**: "A set of source data may be received that may include entity data and relationship data. An entity may be identified in the entity data"; **[0037]**: "Moreover, the example system 200 of FIG. 2 can further include one or more additional computing devices, systems, and software-based tools (e.g., embodied on devices 115, 120, 125, 130, 135, 145, 150) communicating with modeling engine 205, for instance, over one or more networks (e.g., 140)"; **[0039]**: "In some instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models"; **[0054]**: "a dependency model can further model dependencies between computation entities"; and **[0067]**: "The diagram of FIG. 5C illustrates dependencies (e.g., at 550) between the measures M1-M11, as well as dependencies between computational entities C1-C5 (e.g., at 560) as defined in an example dependency model. A dependency model can provide the static information necessary to determine the set of affected computed measures for any given change to an input measure")*, wherein the plurality if network entities are deployed in a plurality of cloud computing platforms *(see Prabhu, **[0033]**: "Servers can include any suitable software component or module, or computing device(s) capable of hosting and/or serving software applications and services (e.g., business models and modeling tools and services of the planning system 105, applications and services of application server 130, applications and services of enterprise system 135, etc.), including distributed, enterprise, or cloud-based*

software applications, data, and services. For instance, servers can be configured to host, serve, or otherwise manage models and data structures, data sets, software service and applications interfacing, coordinating with, or dependent on or used by other services and devices. In some instances, a server, system, subsystem, or computing device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or cloud computing environment and share computing resources, including shared memory, processors, and interfaces");

genericizing each of the network entities based on the respective collected network entity data *(see Prabhu, [**0042**]: "The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data")*;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities *(see Prabhu, **FIG. 5A-C**; [**0030**]: "user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify, and analyze scenarios and business plans based on the models"; and [**0076**]: "Relationships between entities, member types, members (or groups (or "sets") of members), and particular member type attributes can be non-hierarchical and/or hierarchical and, in some instances, be organized in multi-dimensional hierarchies that allow members, member groups, and member type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency model")*; and

storing the generated at least a network graph *(see Prabhu, [**0095**]: "Plan models that are recorded and archived in the generation of scenarios can be managed, in some*

implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of scenarios that the system can simultaneously evaluate and compare, among other examples").

As per **claim 16**, Prabhu teaches a non-transitory computer readable medium having stored thereon instructions *(see Prabhu, **[0104]**: "A computer storage medium can be a non-transitory medium")* for causing a processing circuitry to execute a process for generation of unified graph models for network entities, the process comprising:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property *(see Prabhu, **Abstract**: "A set of source data may be received that may include entity data and relationship data. An entity may be identified in the entity data"; **[0037]**: "Moreover, the example system 200 of FIG. 2 can further include one or more additional computing devices, systems, and software-based tools (e.g., embodied on devices 115, 120, 125, 130, 135, 145, 150) communicating with modeling engine 205, for instance, over one or more networks (e.g., 140)"; **[0039]**: "In some instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models"; **[0054]**: "a dependency model can further model dependencies between computation entities"; and **[0067]**: "The diagram of FIG. 5C illustrates dependencies (e.g., at 550) between the measures M1-M11, as well as dependencies between computational entities C1-C5 (e.g., at 560) as defined in an example dependency model. A dependency model can provide the static information necessary to determine the set of affected computed measures for any given change to an input measure")*, wherein the plurality if network entities are deployed in a plurality of cloud computing platforms *(see Prabhu, **[0033]**: "Servers*

can include any suitable software component or module, or computing device(s) capable of hosting and/or serving software applications and services (e.g., business models and modeling tools and services of the planning system 105, applications and services of application server 130, applications and services of enterprise system 135, etc.), including distributed, enterprise, or cloud-based software applications, data, and services. For instance, servers can be configured to host, serve, or otherwise manage models and data structures, data sets, software service and applications interfacing, coordinating with, or dependent on or used by other services and devices. In some instances, a server, system, subsystem, or computing device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or cloud computing environment and share computing resources, including shared memory, processors, and interfaces");

genericizing each of the network entities based on the respective collected network entity data *(see Prabhu, **[0042]**: "The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data")*;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities *(see Prabhu, **FIG. 5A-C**; **[0030]**: "user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify, and analyze scenarios and business plans based on the models"; and **[0076]**: "Relationships between entities, member types, members (or groups (or "sets") of members), and particular member type attributes can be non-hierarchical and/or hierarchical and, in some instances, be organized in multi-dimensional hierarchies that allow members, member groups, and member*

type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency model"); and

storing the generated at least a network graph *(see Prabhu, [**0095**]: "Plan models that are recorded and archived in the generation of scenarios can be managed, in some implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of scenarios that the system can simultaneously evaluate and compare, among other examples")*.

As per **claim 17**, Prabhu teaches a system for generation of unified graph models for network entities, comprising:

a processing circuitry *(see Prabhu, [**0038**]: "a modeling engine 205 can include one or more processors (e.g., 230) and memory elements (e.g., 235), as well as one or more software- and/or hardware-implemented components and tools embodying functionality of the modeling engine 205")*; and

a memory, the memory containing instructions that, when executed by the processing circuitry *(see Prabhu, [**0104**]: "A computer storage medium can be a non-transitory medium")*, configure the system to:

collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property *(see Prabhu, **Abstract**: "A set of source data may be received that may include entity data and relationship data. An entity may be identified in the entity data"; [**0037**]: "Moreover, the example system 200 of FIG. 2 can further include one or more additional computing devices, systems, and software-based tools (e.g., embodied on devices 115, 120, 125, 130, 135, 145, 150) communicating with modeling engine 205, for instance, over one or more networks (e.g., 140)"; [**0039**]: "In some*

*instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models"; [**0054**]: "a dependency model can further model dependencies between computation entities"; and [**0067**]: "The diagram of FIG. 5C illustrates dependencies (e.g., at 550) between the measures M1-M11, as well as dependencies between computational entities C1-C5 (e.g., at 560) as defined in an example dependency model. A dependency model can provide the static information necessary to determine the set of affected computed measures for any given change to an input measure")*, wherein the plurality if network entities are deployed in a plurality of cloud computing platforms *(see Prabhu, [**0033**]: "Servers can include any suitable software component or module, or computing device(s) capable of hosting and/or serving software applications and services (e.g., business models and modeling tools and services of the planning system 105, applications and services of application server 130, applications and services of enterprise system 135, etc.), including distributed, enterprise, or cloud-based software applications, data, and services. For instance, servers can be configured to host, serve, or otherwise manage models and data structures, data sets, software service and applications interfacing, coordinating with, or dependent on or used by other services and devices. In some instances, a server, system, subsystem, or computing device can be implemented as some combination of devices that can be hosted on a common computing system, server, server pool, or cloud computing environment and share computing resources, including shared memory, processors, and interfaces")*;

genericizing each of the network entities based on the respective collected network entity data *(see Prabhu, [**0042**]: "The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the*

relationships among them, as well as provide various commands to manage the state of the data");

generate at least a network graph, wherein the generated network graph is a multi- dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities *(see Prabhu,* ***FIG. 5A-C****; [****0030****]: "user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify, and analyze scenarios and business plans based on the models"; and [****0076****]: "Relationships between entities, member types, members (or groups (or "sets") of members), and particular member type attributes can be non-hierarchical and/or hierarchical and, in some instances, be organized in multi-dimensional hierarchies that allow members, member groups, and member type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency model")*; and

store the generated at least a network graph *(see Prabhu, [****0095****]: "Plan models that are recorded and archived in the generation of scenarios can be managed, in some implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of scenarios that the system can simultaneously evaluate and compare, among other examples")*.

DEPENDENT:

As per **claims 2 and 18**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein the network entity property relates to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration *(see Prabhu, **[0048]**: "Each of the member types 315a, 315b can respectively define a set of member-type attributes (e.g., 330a, 330b) describing features and details generally relevant to members of that type. For example, a television member type 315a can include member type attributes such as the refresh rate, screen size, and technology (e.g., LED, LCD, plasma, etc.) of a particular television (i.e., member of the television member type), including other potential television-related attributes. Similarly, a computer member type 315b, while a member type of the same business entity (e.g., Product), can have a different set of attributes corresponding to features and specifications of computers, such as processor type, processor speed, memory, hard drive, etc")*.

As per **claims 3 and 19**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein genericizing each of the network entities further comprises: generating a new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity *(see Prabhu, **[0042]**: "The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data")*.

As per **claims 4 and 20**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein genericizing the at least one network entity comprises: converting the at least one network entity into a new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity *(see Prabhu, **[0042]**: "The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data")*.

As per **claims 5 and 21**, which respectively depend on claims 1, and 17, Prabhu further teaches further comprising: creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities *(see Prabhu, [**0039**]: "In some implementations, an example model generator 240 can be included possessing functionality for creating or editing business models. In some instances, a model can be generated by instantiating an instance of a preexisting model type, model template, or class, among other examples")*.

As per **claims 6 and 22**, which respectively depend on claims 5, and 21, Prabhu further teaches wherein creating at least one imputed entity comprises: identifying at least one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity *(see Prabhu, [**0039**]: "In some instances, a model can be generated by instantiating an instance of a preexisting model type, model template, or class, among other examples")*.

As per **claims 7 and 23**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein the generated network graph is a unified representation of the plurality of network entities *(see Prabhu, [**0029**]: "he modeled relationships can include both hierarchical and non-hierarchical relationships and dependencies. Based on this capability, the framework can be used for modeling a large number of business entities and business workflows to give business users complete visibility into modeled aspects of the business workflow and scenarios")*.

As per **claims 11 and 27**, which respectively depend on claims 9, and 25, Prabhu further teaches wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities,

wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity *(see Prabhu, **FIG. 5A-C**)*.

As per **claims 12 and 28**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge *(see Prabhu, **FIG. 3A**; and **[0040]**: "Data storage engine 245 can store and manage measures and measure (fact) data for applicable sets of business entities models, meta data for describing and processing entities, relationships, and fact data (such as computation rules, procedures, scripts) included in the business models, among other data. Data elements can include, for examples, data elements describing domains (e.g., product domain, organization domain, etc.), attributes (e.g., products, product brands, product categories, etc.), hierarchies (e.g., Product->Brand->Category), non-hierarchical relationships (e.g., Competitor: Product=>Competitor Product), submitted and computed measures (e.g., gross or net sales for a particular market segment), facts (or measure data) (e.g., the actual values of gross sales, net sales, and other measures), and meta data (e.g., active rules, measure calculations, model logic, procedures, etc.), among other examples")*.

As per **claims 13 and 29**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein storing the generated at least one network graph comprises: returning at least a visualization of the generated at least one network graph *(see Prabhu, **[0040]**: "Data managed by data storage engine 245 can be stored in-memory, on-disk, or through a combination. The data storage engine 245 can support a set of data operators allowed to access or modify the data, in some cases providing multi-user transaction support for data access, among other example functionality and features")*.

As per **claims 14 and 30**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein storing the generated at least one network graph further comprises:

storing the generated network graph in a graph database *(see Prabhu, **FIG. 2**; and **[0040]**: "Data managed by data storage engine 245 can be stored in-memory, on-disk, or through a combination. The data storage engine 245 can support a set of data operators allowed to access or modify the data, in some cases providing multi-user transaction support for data access, among other example functionality and features")*.

As per **claims 15 and 31**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection *(see Prabhu, **FIG. 5C**)*.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

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

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 9, 10, 25, and 26 are rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (US 2019/0258973) in view of Ettle et al. (US 2007/0147269).

As per **claims 9 and 25**, which respectively depend on claims 1, and 17, Prabhu does not explicitly teach wherein the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

Ettle teaches wherein the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity *(see Prabhu, **[0076]**: "The topology search is based upon an abstract model of the network in which groups of equivalent network nodes in the underlying network model are represented as vertices in a simplified network graph (with a given vertex representing a node group), and the connectivity between these groups is represented by edges in the graph")*.

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu in view of Ettle so that the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity. One would be motivated to do so because vertex are routine, conventional, and widely employed in a graph representation.

As per **claims 10 and 26**, which respectively depend on claims 9, and 25, Prabhu does not explicitly teach wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

Ettle teaches the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex *(see Prabhu, **[0166]**: "The route view 122 includes icons 128 representing the route*

nodes, labelled with node names, and circuit connections represented graphically as pipes 130 labelled with the connection type").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu in view of Ettle so that the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex. One would be motivated to do so because vertex are routine, conventional, and widely employed in a graph representation.

8. Claims 32 and 33 are rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (US 2019/0258973) in view of Chandrashekhar et al. (US 2018/0063193).

As per **claims 32 and 33**, which respectively depend on claims 3 and 19, Prabhu does not explicitly teach wherein the generic network entity represents at least an entity configured to apply security rules.

Chandrashekhar teaches wherein the generic network entity represents at least an entity configured to apply security rules *(see Chandrashekhar, **[0098]**: "The control agent 170 uses this data to configure the MFE 175 to apply networking and/or security rules to packet sent to and from the workload application 165, similar to how the local controller 120 configures the MFEs 130")*.

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu in view of Chandrashekhar so that the generic network entity represents at least an entity configured to apply security rules. One would be motivated to do so because Prabhu teaches in paragraph ***[0028]**, "Accordingly, such plan models can be used to coordinate the efforts of various portions of an organization directed to <u>different goals to optimize the activities of an organization</u>", emphasis added*, wherein security is a vital element of any organization.

Conclusion

9. For the reasons above, claims 1-31 have been rejected and remain pending.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL Y WON whose telephone number is (571)272-3993. The examiner can normally be reached on Wk.1: M-F: 8-5 PST & Wk.2: M-Th: 8-7 PST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice. Please **note**, the examiner generally will not hold interviews after a Final Office Action has been issued.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nicholas R Taylor can be reached on 571-272-3889. 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.

MICHAEL YOUNG WON
Primary Patent Examiner
Art Unit 2443

/Michael Won/
Primary Examiner, Art Unit 2449
April 1, 2022

Notice of References Cited	Application/Control No. 17/161,190	Applicant(s)/Patent Under Reexamination SHEMESH et al.	
	Examiner MICHAEL Y WON	Art Unit 2443	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-20170127427-A1	05-2017	CLARIDGE; Philip Geoffrey	H04W4/025	1/1
*	B	US-20180063193-A1	03-2018	Chandrashekhar; Ganesan	H04L63/029	1/1
*	C	US-20190289038-A1	09-2019	LI; Yong	H04L63/205	1/1
*	D	US-20200366759-A1	11-2020	Sinha; Rajiv	G06F9/5072	1/1
*	E	US-10009251-B1	06-2018	Koster; David M.	H04L67/141	1/1
*	F	US-10326673-B2	06-2019	Kulshreshtha; Ashutosh	H04L63/1425	1/1
	G					
	H					
	I					
	J					
	K					
	L					
	M					

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.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	Art Unit
	MICHAEL Y WON	2443

CPC - Searched*		
Symbol	Date	Examiner
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	12/16/2021	MW

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
PE2E SEARCH	12/16/2021	MW
INVENTOR/ASSIGNEE SEARCH	12/16/2021	MW
NPL SEARCH: DIALOG	12/17/2021	MW

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

IPR2025-01084
Orca Security EX1002 Page 288

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	**Art Unit**
	MICHAEL Y WON	2443

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	12/17/2021	04/01/2022							
	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	✓	✓							
	32		✓							
	33		✓							

IPR2025-01084
Orca Security EX1002 Page 289

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	201700	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:27 PM
L2	60	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND genericiz$5	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:42 PM
L3	0	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND genericiz$5 AND (collect$4 OR gather$4 OR retriev$4) near10 characteristics AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:46 PM
L4	0	genericiz$5 AND (collect$4 OR gather$4 OR retriev$4) near10 characteristics AND	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU,	OR	ON	ON	2021/12/16 01:52 PM

IPR2025-01084
Orca Security EX1002 Page 290

		generat$4 near10 network near4 graph	CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L5	1	genericiz$5 AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:53 PM
L6	0	genericiz$5 near5 (collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:54 PM
L7	7	genericiz$5 near5 (collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN,	OR	ON	ON	2021/12/16 01:54 PM

IPR2025-01084
Orca Security EX1002 Page 291

			WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L8	35	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:58 PM
L9	6	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph near10 relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:03 PM
L10	2	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 (network near6 graph OR topology) near10 relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:04 PM
L11	81694	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2021/12/16 02:07 PM

IPR2025-01084
Orca Security EX1002 Page 292

			EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L12	4673	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:07 PM
L13	1967	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional AND stor$4 near6(graph OR model)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:08 PM
L14	1794	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO;	OR	ON	ON	2021/12/16 02:09 PM

			JPO; DERWENT; IBM_TDB)				
L15	327	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:09 PM
L16	143	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR generic)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:10 PM
L17	221	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:10 PM
L18	153	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:11 PM

IPR2025-01084
Orca Security EX1002 Page 294

		dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw))					
L19	143	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw)) AND network near4 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:22 PM
L20	116	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw)) AND network near4 (device OR node OR entity OR module) AND (device OR node OR entity OR module) near3 (class OR type OR category OR configuration)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:24 PM
L21	164301	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) topolog$5 near5 network	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:31 PM
L22	1330	generat$4 near10	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16

		(network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 network					08:31 PM
L23	104489	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 networkand multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:33 PM
L24	110	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 network AND multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:33 PM
L25	532	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:38 PM
L26	422	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:38 PM

		OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24					
L27	230	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:39 PM
L28	112	topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM
L29	3986517	network near6topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM
L30	57	network near6 topology AND (discover$4 OR generat$4) near10	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM

		(network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24					
L31	1254	network near6 topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:54 PM
L32	18	network near6 topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:55 PM
L33	8	network near6 topology AND network near6 discovery AND (generat$4) near6 (graph OR model OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:00 PM

		node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)					
L34	10466718	(creat$5 OR generat$5)network near6 topology AND network near6 discovery AND (graph OR model OR topology) near6 network AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:03 PM
L35	0	(creat$5 OR generat$5) near5 network near6 topology AND network near6 discovery AND (graph OR model OR topology) near6 network AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:03 PM
L36	2194	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:05 PM
L37	179	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:06 PM

		model) near5 (user OR client) AND (multidimensional OR multi-dimensional)					
L38	1261503	collect	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:10 PM
L39	156	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client) AND (multidimensional OR multi-dimensional) AND (collect$4 OR gather$4 OR receiv$5 OR retriev$4) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:13 PM
L40	165	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client) AND (multidimensional OR multi-dimensional) AND (collect$4 OR gather$4 OR receiv$5 OR retriev$4 OR captur$4) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:14 PM
L41	2457290	convert	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 10:20 PM
L42	17228	(model) WITH vertex WITH (entity OR device OR node OR module)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2021/12/17 12:24 AM

			IBM_TDB)				
L43	398	(model) WITH vertex WITH network near2 (entity OR device OR node OR module)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/17 12:24 AM
L44	39	(model) WITH vertex WITH network near2 (entity OR device OR node OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/17 12:25 AM
L45	2	"20180024981" "20200322227"	(US-PGPUB)	OR	ON	ON	2022/04/01 12:08 PM
L46	2	"20190258973" "20070147269"	(US-PGPUB)	OR	ON	ON	2022/04/01 12:10 PM
L47	670	generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:23 PM
L48	13	generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO;	OR	ON	ON	2022/04/01 12:25 PM

			JPO; DERWENT; IBM_TDB)				
L49	3	generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/01 12:25 PM
L50	121	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:53 PM
L51	0	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND collect$5 near5 network near2 (node OR module OR entity) AND relation$4 near10 network near2 (node OR module OR entity)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 12:53 PM
L52	25	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND security	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL,	OR	ON	ON	2022/04/01 02:33 PM

IPR2025-01084
Orca Security EX1002 Page 302

		near4 protocol	PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L53	2	provisioning AND generat$4 near5 network near5 topology AND cloud AND generat$5 near5 (model OR graph) near10 network AND security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:47 PM
L54	1638	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:49 PM
L55	221	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/01 02:50 PM
L56	177	(H04L43/045 OR G06F16/9024 OR	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2022/04/01 02:50 PM

		H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule AND topology	AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L57	159	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND provision$5 AND cloud AND apply$4 near5 security near4 rule AND topology	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/01 02:50 PM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

Dialog®

STIC
Scientific and Technical Information Center

Search Strategy from Dialog

April 01 2022 15:02

IPR2025-01084
Orca Security EX1002 Page 305

Search Strategy

Databases: Abstracts in New Technology & Engineering, Civil Engineering Abstracts, Earthquake Engineering Abstracts, Ei Compendex®, Inspec®, Mechanical & Transportation Engineering Abstracts, ProQuest Advanced Tech & Aerospace Professional, ProQuest Materials Research Professional, ProQuest Technology Research Professional

Set#	Searched for	Results
S1	(generat$4 near/5 network near/5 topology AND cloud AND generat$5 near/5 (model OR graph) near/10 network)	80°
S2	(generat$4 near/5 network near/5 topology AND cloud AND generat$5 near/5 (model OR graph) near/10 network) AND collect$5 near/5 network near/2 (node OR module OR entity) AND relation$4 near/10 network near/2 (node OR module OR entity)	0°
S3	((generat$4 near/5 network near/5 topology AND cloud AND generat$5 near/5 (model OR graph) near/10 network) AND collect$5 near/5 network near/2 (node OR module OR entity))	6°
S4	(generat$4 near/5 network near/5 topology AND cloud AND generat$5 near/5 (model OR graph) near/10 network) AND relation$4 near/10 network near/2 (node OR module OR entity)	0°
S5	(generat$4 near/5 network near/5 topology AND cloud AND generat$5 near/5 (model OR graph) near/10 network) AND collect$5 near/5 network near/2 (node OR module OR entity) AND security near/4 (protocol or rule)	2°
S6	provision$5 AND cloud AND security near/4 (protocol or rule)	1174°
S7	provision$5 AND cloud AND apply$4 near/5 security near/4 (protocol or rule)	15°
S8	provision$5 AND cloud AND apply$4 near/5 security near/4 (protocol or rule) and topology	6°

° Duplicates are removed from the search and from the result count.

IPR2025-01084
Orca Security EX1002 Page 306

Contact ProQuest
Copyright © 2022 ProQuest LLC. All rights reserved. - **Terms and Conditions**

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	17161190
Filing Date	2021-01-28
First Named Inventor	Daniel Hershko SHEMESH
Art Unit	2449
Examiner Name	Michael Young WON
Attorney Docket Number	WZIO P1933

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20180024981	A1	2018-01-25	Xia et al.	Entire Document
	2	20200322227	A1	2020-10-08	Janakiraman	Entire Document

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

EFS Web 2.1.18

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /MW/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17161190
	Filing Date	2021-01-28
	First Named Inventor	Daniel Hershko SHEMESH
	Art Unit	2449
	Examiner Name	Michael Young WON
	Attorney Docket Number	WZIO P1933

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

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/Michael Won/ (03/31/2022)	Date Considered	03/31/2022

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

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /MW/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17161190
	Filing Date	2021-01-28
	First Named Inventor	Daniel Hershko SHEMESH
	Art Unit	2449
	Examiner Name	Michael Young WON
	Attorney Docket Number	WZIO P1933

CERTIFICATION STATEMENT

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

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

OR

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

See attached certification statement.

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

A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Michael Ben-Shimon/	Date (YYYY-MM-DD)	2022-03-23
Name/Print	Michael Ben-Shimon	Registration Number	69610

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /MW/

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 record s.

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.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /MW/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	17161190
	Filing Date	2021-01-28
	First Named Inventor	Daniel Hershko SHEMESH
	Art Unit	2449
	Examiner Name	Michael Young WON
	Attorney Docket Number	WZIO P1933

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20180024981	A1	2018-01-25	Xia et al.	Entire Document
	2	20200322227	A1	2020-10-08	Janakiraman	Entire Document

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	17161190
	Filing Date	2021-01-28
	First Named Inventor	Daniel Hershko SHEMESH
	Art Unit	2449
	Examiner Name	Michael Young WON
	Attorney Docket Number	WZIO P1933

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

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	17161190
	Filing Date	2021-01-28
	First Named Inventor	Daniel Hershko SHEMESH
	Art Unit	2449
	Examiner Name	Michael Young WON
	Attorney Docket Number	WZIO P1933

CERTIFICATION STATEMENT

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

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

OR

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

See attached certification statement.

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

A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Michael Ben-Shimon/	Date (YYYY-MM-DD)	2022-03-23
Name/Print	Michael Ben-Shimon	Registration Number	69610

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

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 record s.

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.

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	03/23/2022 03:24:38 PM ET	WZIO P1933

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Catherine Hodic
PATENT CENTER #	60585422	AUTHORIZED BY	Michael Ben-Shimon
CUSTOMER #	122066	FILING DATE	01/28/2021
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 2707	E20223MF25151585	Catherine Hodic

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
2251	EXTENSION FOR RESPONSE WITHIN FIRST MONTH	110.00	1	110.00
			TOTAL AMOUNT:	$110.00

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	**03/23/2022 03:24:38 PM ET**	**WZIO P1933**

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Catherine Hodic
PATENT CENTER #	60585422	FILING DATE	01/28/2021
CUSTOMER #	122066	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Michael Ben-Shimon

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
WZIO_P1933_nfoa_response_dated_20211221_20220323.pdf	11	Amendment/Request for Reconsideration-After Non-Final Rejection	159 KB
WZIO_P1933_ids_20220323.pdf	4	Information Disclosure Statement (IDS) Form (SB08)	1252 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
WZIO_P1933_nfoa_response_d	27036201A34948DFCD50D944E19C1225C11CF699F52113B8BF

ated_20211221_20220323.pdf	BC104F889267BEC3EA06F3C6E2745C4DD671457DDA72B8624EE9F88DF2790682E2422DB32F01A2
WZIO_P1933_ids_20220323.pdf	8DBE9CC3B351DE917CD810694FE6B93AC69B5BDE60D31FE98C86AB00ED854DECDFA8118806565F34415CBD05A8F7D9D52C5477E2A617A93F97E37A1F9AD967BA

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 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

Applicants:	Daniel Hershko SHEMESH
Serial No:	17/161,190
Filed:	January 28, 2021
Docket No.:	WZIO P1933
Examiner:	WON, MICHAEL YOUNG
Art Unit:	2449
Confirmation No.:	6419

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

AMENDMENT UNDER 37 C.F.R. §1.111

Sir:

Applicant hereby petitions for a one (1) month extension of time, thereby extending the date of response to the non-final Office Action dated **December 21, 2021,** the required fee being paid through the EFS.

In response to the non-final Office Action dated **December 21, 2021**, the following amendments and remarks are hereby submitted. Reconsideration of the application is respectfully requested.

Amendments to the claims begin on page **Error! Bookmark not defined.** of this paper.

Remarks begin on page **8** of this paper.

AMENDMENTS TO THE CLAIMS

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

1. (Currently Amended) A method for generation of unified graph models for network entities, comprising:

collecting, for each ~~at least one~~ network entity of a plurality of network entities, ~~at least one~~ network entity data ~~feature~~, wherein the ~~at least one~~ network entity data ~~feature~~ collected for a network entity includes ~~is~~ at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericizing each of the network entities based on the respective collected ~~at least one~~ network entity data;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and

storing the generated at least a network graph.

2. (Currently Amended) The method of claim 1, wherein the ~~at least one network entity data feature is a~~ network entity property ~~relating~~ relates to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration.

3. (Currently Amended) The method of claim 1, wherein genericizing each of the network entities ~~the at least one network entity~~ further comprises:

generating a new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity.

4. (Currently Amended) The method of claim 1, wherein genericizing ~~the at least one network entity~~ each of the network entities further comprises:

converting the at least one network entity into a new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity.

5. (Original) The method of claim 1, further comprising:

creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities.

6. (Currently Amended) The method of claim 5, wherein creating at least one imputed entity comprises:

identifying at least ~~a~~ one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity.

7. (Original) The method of claim 1, wherein the generated network graph is a unified representation of the plurality of network entities.

8. (Cancelled)

9. (Original) The method of claim 1, wherein the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

10. (Original) The method of claim 9, wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

11. (Original) The method of claim 9, wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity.

12. (Original) The method of claim 11, wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge.

13. (Currently Amended) The method of claim 1, wherein storing the generated ~~at least one~~ network graph further comprises:

returning at least a visualization of the generated at least one network graph.

14. (Currently Amended) The method of claim 1, wherein storing the generated at ~~least one~~ network graph further comprises:

storing the generated network graph in a graph database.

15. (Original) The method of claim 1, wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection.

16. (Currently Amended) A non-transitory computer readable medium having stored thereon instructions for causing a processing circuitry to execute a process for generation of unified graph models for network entities, the process comprising:

collecting, for each ~~at least one~~ network entity of a plurality of network entities, ~~at least one~~ network entity data ~~feature~~, wherein the ~~at least one~~ network entity data ~~feature~~ collected for a network entity includes ~~is~~ at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericizing each of the network entities based on the respective collected ~~at least one~~ network entity data;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and

storing the generated at least a network graph.

17. (Currently Amended) A system for generation of unified graph models for network entities, comprising:

a processing circuitry; and

a memory, the memory containing instructions that, when executed by the processing circuitry, configure the system to:

collect, for each ~~at least one~~ network entity of a plurality of network entities, ~~at least one~~ network entity data ~~feature~~, wherein the ~~at least one~~ network entity data ~~feature~~ collected for a network entity includes ~~is~~ at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms;

genericize each of the network entities based on the respective collected ~~at least one~~ network entity data the collected at least one network entity;

generate at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and

store the generated at least a network graph.

18. (Currently Amended) The system of claim 17, wherein the ~~at least one network entity data feature is a~~ network entity property ~~relating~~ relates relating to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration.

19. (Original) The system of claim 17, wherein the system is further configured to:

generate a new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity.

20. (Original) The system of claim 17, wherein the system is further configured to:

convert the at least one network entity into a new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity.

21. (Original) The system of claim 17, wherein the system is further configured to:
create at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities.

22. (Currently Amended) The system of claim 21, wherein the system is further configured to:

identify at least ~~a~~ one cloud computing platform of the plurality of cloud computing platforms or environment functionality which corresponds with a functionality of a generic network entity.

23. (Original) The system of claim 17, wherein the generated network graph is a unified representation of the plurality of network entities.

24. (Cancelled)

25. (Original) The system of claim 17, wherein the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

26. (Original) The system of claim 25, wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

27. (Original) The system of claim 25, wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a

relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity.

28. (Original) The system of claim 27, wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge.

29. (Currently Amended) The system of claim 17, wherein the system is further configured to:

return at least a visualization of the ~~generated at least one~~ network graph.

30. (Original) The system of claim 17, wherein the system is further configured to:

store the generated network graph in a graph database.

31. (Original) The system of claim 17, wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection.

32. (New) The method of claim 3, wherein the generic network entity represents at least an entity configured to apply security rules.

33. (New) The system of claim 19, wherein the generic network entity represents at least an entity configured to apply security rules.

REMARKS

In the Non-Final Office Action dated December 21, 2021, it is noted that claims 1-19 are pending. Claims 1-19 stand rejected under 35 USC 103. By this amendment, various claims have been amended, and claims 8 and 24 have been cancelled. By the foregoing amendments, no new matter has been added.

Claim Rejections under 35 USC 102

Claims 1-8, 11-24, and 27-31 stand rejected under 35 U.S.C. 102(a)(1) and 102(a)(2) as being anticipated by Prabhu et al. (US 2019/0258973), hereinafter "Prabhu."". Applicant respectfully disagrees and traverses the rejection.

Applicants avoid this ground of rejection for the following reasons.

Independent Claim 1 and dependent Claims 2-8 and 11-15

Independent claim 1 recites (emphasis added):

> A method for generation of unified graph models for network entities deployed in **a cloud computing environment**, comprising:
> collecting, for each network entity of a plurality of network entities, network entity data, wherein the network entity data collected for a network entity includes at least a network entity property, wherein the plurality of network entities are deployed in a plurality of cloud computing platforms in the cloud computing environment;
> genericizing each of the network entities based on the respective collected network entity data;
> generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and
> storing the generated at least a network graph.

The amendments clarify that the network graph is generated for **network** entities in a cloud computing environment, including multiple cloud computing platforms. See in this regard Fig. 1 and the corresponding paragraphs of the specification as originally filed.

There is simply **nothing** like this taught or suggested by Prabhu. Thus, Prabhu does **not** appear to teach this element of Applicants' claim 1.

Prabhu appears to disclose a method for creating a computational unified graph hierarchy model. Prabhu's method requires receiving a set of source data that may include entity data and relationship data designating the entity and a hierarchy; determining a non-hierarchical link between the entity and a related entity, and updating a graph network to include the non-hierarchical link. Prabhu's method further requires performing a set of measures for a relational link of the entity and configurating a dependency between the relational links based on the set of measures. *See Prabhu Abstract*.

Although Prabhu discusses creating a computational unified graph hierarchy model, such model includes business entities and not related to network entities, on of a computational unified graph hierarchy model, such model includes business entities and **not** related to network entities, and specifically network entities deployed in a cloud computing environment, as required in Applicant's claim 1.

For example, Figs. 5A-5C and paragraph [0052] of Prabhu show a hierarchy model of business entities corresponding to all **products** currently offered by a particular company. *See also Prabhu's paragraph [0075]* states the model is created for business entities, such as regions, organizations, persons, products, product categories, market regions, market segments, channels, calendar periods, time, locations, customers, suppliers, factories, and so on.

Since Prabhu does **not** teach or suggest the *modeling **network** entities deployed in the cloud computing platforms* called for in claim 1, Prabhu does **not** teach, show, or disclosed the claimed invention.

Applicant notes Prabhu's specification mentions the term "cloud computing environment" as a stock language describing an example implementation of a computing system. However, Prabhu is silence on modelling **network** entities deployed in the cloud computing platforms, as required by Applicant's claim 1.

In view of the foregoing, Prabhu does **not** appear to teach all of the elements of Applicants' claim 1. As such, Prabhu also can**not** teach any of the Applicants' dependent claims, which depend from claim 1.

Thus, Applicants' claims 1, 2-8 and 11-15, which depend thereon, are allowable over Prabhu under 35 U.S.C. §102. Withdrawal of this rejection is respectfully requested.

Independent claims 16 and 17 dependent claims 18-24, and 27-31

Independent claims 16 and 17 stand rejected for substantially similar reasons as is claim 1. Accordingly, the above arguments are therefore essentially repeated, *mutatis mutandis*, and applied to claims 16 and 17. Thus, claims 16 and 17, as well as claims 18-24 and 27-31, which depend from claim 17, are likewise allowable.

Withdrawal of these rejections is respectfully requested.

Claims 32 and 33

New claims 32 and 33 are allowable on their own merits. Each of claims 32 and 33 recites, emphasis added:

> the generic network entity represents at least an entity configured to apply **security** rules.

There is simply **nothing** like this taught or suggested by Prabhu. Thus, Prabhu does **not** appear to teach this element of Applicants' claims 32 and 33.

Claim Rejections Claims 9-10 and 25-26 under 35 USC 103

Claim 9-10 and 25-26 stand rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (US 2019/0258973) in view of Ettle et al. (US 2007/0147269).

Given that these rejections of dependent claims are based on the combination of Prabhu and Ettle, these claims are allowable at least for the same reasons given hereinabove with regard to the respective independent claim from which they depend as the additional reference (Ettle) is cited as curing the above-described deficiencies of Prabhu. Withdrawal of these rejections is respectfully requested.

CONCLUSION

Having fully addressed the Office Action's rejections, it is believed that, in view of the preceding remarks, this application stands in condition for allowance. Accordingly, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the Applicants' representative at (908) 274-3111, so that a mutually convenient date and time for a telephonic interview may be scheduled.

Any fee due this paper may be charged to, or overpayment credited to, deposit account **50-6438.**

Respectfully submitted,
M&B IP Analysts, LLC

/Michael Ben-Shimon/
Michael Ben-Shimon
Reg. No.: 69,610

Mail all correspondence to:
CUSTOMER NO.: 122066

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 17/161,190	Filing Date 01/28/2021	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $240 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	03/23/2022	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 31	Minus	** 31	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $240 =	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

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ 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.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/PEARLIE A FENNELL/
*** 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.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933

CONFIRMATION NO. 6419

POA ACCEPTANCE LETTER

122066
M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

OC000000132538668

Date Mailed: 03/18/2022

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/16/2022.

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**.

/kgebremichael/

DocuSign Envelope ID: BF70224F-B39E-4A0A-83E5-1F09C3722A94

Document Description: Power of Attorney

PTO/AIA/82B (07-13)
Approved for use through 01/31/2018. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

POWER OF ATTORNEY 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: 122066

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):

Wiz, Inc.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature	DocuSigned by: Nir Dagan F8BBF369D1FF46A...	Date (Optional)	3/16/2022
Name	Nir Dagan		
Title	Legal Counsel		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

DocuSign Envelope ID: BF70224F-B39E-4A0A-83E5-1F09C3722A94

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.

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/161,190	**03/16/2022 02:08:34 PM ET**	**WZIO P1933**

Title of Invention

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6419	FILED BY	Catherine Hodic
PATENT CENTER #	60575318	FILING DATE	01/28/2021
CUSTOMER #	122066	FIRST NAMED INVENTOR	Daniel Hershko SHEMESH
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Michael Ben-Shimon

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
WZIO_General_POA_Nir_Dagan_SIGNED_20220316.pdf	2	Power of Attorney	264 KB

Warning: The PDF file has been signed with a digital signature and the legal effect of the document will be based on the contents of the file not the digital signature.

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
WZIO_General_POA_Nir_Dagan_SIGNED_20220316.pdf	17BD550457FFDB4E5540726EEB15AF49116D8782FCCB5A293 1E00330EA151B0AE1D83F85C028AF9F79B2A685971B41AD75

AD4DDD91AE6D8EE530BF1E3A453614

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933	6419

122066 7590 12/21/2021

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

EXAMINER	
WON, MICHAEL YOUNG	

ART UNIT	PAPER NUMBER
2449	

NOTIFICATION DATE	DELIVERY MODE
12/21/2021	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):

eofficeaction@appcoll.com
pair@mb-ip.com

Office Action Summary	**Application No.** 17/161,190	**Applicant(s)** SHEMESH et al.	
	Examiner MICHAEL Y WON	**Art Unit** 2449	**AIA (FITF) 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 28 January 2021.

☐ 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) 1-31 is/are rejected.

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

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

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

Application Papers

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

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

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

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

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

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

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

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

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

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

2. This action is in response to the application filed January 28, 2021.

3. Claims 1-31 have been examined and are pending with this action.

Claim Rejections - 35 USC § 102

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

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.
>
> (a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

4. Claim(s) 1-8, 11-24, and 27-31 is/are rejected under 35 U.S.C. 102(a)(1) and 102(a)(2) as being anticipated by Prabhu et al. (US 2019/0258973).

INDEPENDENT:

As per **claim 1**, Prabhu teaches a method for generation of unified graph models for network entities, comprising:

collecting, for at least one network entity of a plurality of network entities, at least one network entity data feature, wherein the at least one network entity data feature is a network entity property *(see Prabhu, **Abstract**: "A set of source data may be received that may include entity data and relationship data. An entity may be identified in the entity data"; and **[0039]**: "In some instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models")*;

genericizing the collected at least one network entity *(see Prabhu, **[0042]**: "The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data")*;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities *(see Prabhu, **FIG. 5A-C**; **[0030]**: "user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify, and analyze scenarios and business plans based on the models"; and **[0076]**: "Relationships between entities, member types, members (or groups (or "sets") of members), and particular member type attributes can be non-hierarchical and/or hierarchical and, in some instances, be organized in multi-dimensional hierarchies that allow members, member groups, and member*

type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency model"); and

storing the generated at least a network graph *(see Prabhu, **[0095]**: "Plan models that are recorded and archived in the generation of scenarios can be managed, in some implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of scenarios that the system can simultaneously evaluate and compare, among other examples")*.

As per **claim 16**, Prabhu teaches a non-transitory computer readable medium having stored thereon instructions *(see Prabhu, **[0104]**: "A computer storage medium can be a non-transitory medium")* for causing a processing circuitry to execute a process for generation of unified graph models for network entities, the process comprising:

collecting, for at least one network entity of a plurality of network entities, at least one network entity data feature, wherein the at least one network entity data feature is a network entity property *(see Prabhu, **Abstract**: "A set of source data may be received that may include entity data and relationship data. An entity may be identified in the entity data"; and **[0039]**: "In some instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models")*;

genericizing the collected at least one network entity *(see Prabhu, **[0042]**: "The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data")*;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities *(see Prabhu, **FIG. 5A-C**; **[0030]**: "user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify, and analyze scenarios and business plans based on the models"; and **[0076]**: "Relationships between entities, member types, members (or groups (or "sets") of members), and particular member type attributes can be non-hierarchical and/or hierarchical and, in some instances, be organized in multi-dimensional hierarchies that allow members, member groups, and member type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency model")*; and

storing the generated at least a network graph *(see Prabhu, **[0095]**: "Plan models that are recorded and archived in the generation of scenarios can be managed, in some implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of scenarios that the system can simultaneously evaluate and compare, among other examples")*.

As per **claim 17**, Prabhu teaches a system for generation of unified graph models for network entities, comprising:

a processing circuitry *(see Prabhu, **[0038]**: "a modeling engine 205 can include one or more processors (e.g., 230) and memory elements (e.g., 235), as well as one or more software- and/or hardware-implemented components and tools embodying functionality of the modeling engine 205")*; and

a memory, the memory containing instructions that, when executed by the processing circuitry *(see Prabhu, **[0104]**: "A computer storage medium can be a non-transitory medium")*, configure the system to:

collect, for at least one network entity of a plurality of network entities, at least one network entity data feature, wherein the at least one network entity data feature is a network entity property *(see Prabhu, **Abstract**: "A set of source data may be received that may include entity data and relationship data. An entity may be identified in the entity data"; and **[0039]**: "In some instances, source data (e.g., 265) can also be collected, requested, retrieved, or otherwise accessed to populate attribute fields, build logic of a model, and be otherwise used (e.g., by model generator 240) to generate an instantiation of a particular business model to add to a set of models")*;

genericizing the collected at least one network entity *(see Prabhu, **[0042]**: "The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data")*;

generate at least a network graph, wherein the generated network graph is a multi- dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities *(see Prabhu, **FIG. 5A-C**; **[0030]**: "user interfaces allowing users (e.g., 155, 160, 165, 170, 175, 180) to interact with planning system 105, business models hosted or provided by the planning system 105, and applications, programs, and services hosted or provided by the planning system that allow users to interact with, edit, build, generate and compare business models as well as generate, modify, and analyze scenarios and business plans based on the models"; and **[0076]**: "Relationships between entities, member types, members (or groups (or "sets") of members), and particular member type attributes can be non-hierarchical and/or hierarchical and, in some instances, be*

organized in multi-dimensional hierarchies that allow members, member groups, and member type attributes to organized in multiple different alternate hierarchies and other relationships. Such relationships can also be defined in a dependency model"); and

store the generated at least a network graph *(see Prabhu, [**0095**]: "Plan models that are recorded and archived in the generation of scenarios can be managed, in some implementations, through a plan version control model. The plan version control model can allow for analytics to be conducted on the various versions that are stored. The plan version control model can also provide for management that defines the number of scenarios that the system can simultaneously evaluate and compare, among other examples")*.

DEPENDENT:

As per **claims 2 and 18**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein the at least one network entity data feature is a network entity property relating to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration *(see Prabhu, [**0048**]: "Each of the member types 315a, 315b can respectively define a set of member-type attributes (e.g., 330a, 330b) describing features and details generally relevant to members of that type. For example, a television member type 315a can include member type attributes such as the refresh rate, screen size, and technology (e.g., LED, LCD, plasma, etc.) of a particular television (i.e., member of the television member type), including other potential television-related attributes. Similarly, a computer member type 315b, while a member type of the same business entity (e.g., Product), can have a different set of attributes corresponding to features and specifications of computers, such as processor type, processor speed, memory, hard drive, etc")*.

As per **claims 3 and 19**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein genericizing the at least one network entity further comprises: generating a

new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity *(see Prabhu, [**0042**]: "The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data")*.

As per **claims 4 and 20**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein genericizing the at least one network entity comprises: converting the at least one network entity into a new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity *(see Prabhu, [**0042**]: "The data access and command interface 250 can further provide the capability to add/modify/delete entities, fact data, and the relationships among them, as well as provide various commands to manage the state of the data")*.

As per **claims 5 and 21**, which respectively depend on claims 1, and 17, Prabhu further teaches further comprising: creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities *(see Prabhu, [**0039**]: "In some implementations, an example model generator 240 can be included possessing functionality for creating or editing business models. In some instances, a model can be generated by instantiating an instance of a preexisting model type, model template, or class, among other examples")*.

As per **claims 6 and 22**, which respectively depend on claims 5, and 21, Prabhu further teaches wherein creating at least one imputed entity comprises: identifying at least a platform or environment functionality which corresponds with a functionality of a generic network entity *(see Prabhu, [**0039**]: "In some instances, a model can be generated by instantiating an instance of a preexisting model type, model template, or class, among other examples")*.

As per **claims 7 and 23**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein the generated network graph is a unified representation of the plurality of network entities *(see Prabhu, [**0029**]: "he modeled relationships can include both hierarchical and non-hierarchical relationships and dependencies. Based on this capability, the framework can be used for modeling a large number of business entities and business workflows to give business users complete visibility into modeled aspects of the business workflow and scenarios")*.

As per **claims 8 and 24**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein the generated network graph is a unified representation of the plurality of environment layers *(see Prabhu, [**0029**]: "he modeled relationships can include both hierarchical and non-hierarchical relationships and dependencies. Based on this capability, the framework can be used for modeling a large number of business entities and business workflows to give business users complete visibility into modeled aspects of the business workflow and scenarios")*.

As per **claims 11 and 27**, which respectively depend on claims 9, and 25, Prabhu further teaches wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity *(see Prabhu, **FIG. 5A-C**)*.

As per **claims 12 and 28**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge *(see Prabhu, **FIG. 3A**; and [**0040**]: "Data storage engine 245 can store and manage measures and measure (fact) data for applicable*

sets of business entities models, meta data for describing and processing entities, relationships, and fact data (such as computation rules, procedures, scripts) included in the business models, among other data. Data elements can include, for examples, data elements describing domains (e.g., product domain, organization domain, etc.), attributes (e.g., products, product brands, product categories, etc.), hierarchies (e.g., Product->Brand->Category), non-hierarchical relationships (e.g., Competitor: Product=>Competitor Product), submitted and computed measures (e.g., gross or net sales for a particular market segment), facts (or measure data) (e.g., the actual values of gross sales, net sales, and other measures), and meta data (e.g., active rules, measure calculations, model logic, procedures, etc.), among other examples").

As per **claims 13 and 29**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein storing the generated at least one network graph comprises: returning at least a visualization of the generated at least one network graph *(see Prabhu, [**0040**]: "Data managed by data storage engine 245 can be stored in-memory, on-disk, or through a combination. The data storage engine 245 can support a set of data operators allowed to access or modify the data, in some cases providing multi-user transaction support for data access, among other example functionality and features")*.

As per **claims 14 and 30**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein storing the generated at least one network graph further comprises: storing the generated network graph in a graph database *(see Prabhu, **FIG. 2**; and [**0040**]: "Data managed by data storage engine 245 can be stored in-memory, on-disk, or through a combination. The data storage engine 245 can support a set of data operators allowed to access or modify the data, in some cases providing multi-user transaction support for data access, among other example functionality and features")*.

As per **claims 15 and 31**, which respectively depend on claims 1, and 17, Prabhu further teaches wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a

tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection *(see **FIG. 5C**)*.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

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

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim is/are rejected under 35 U.S.C. 103 as being unpatentable over Prabhu et al. (US 2019/0258973) in view of Ettle et al. (US 2007/0147269).

As per **claims 9 and 25**, which respectively depend on claims 1, and 17, Prabhu does not explicitly teach wherein the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

Ettle teaches wherein the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity *(see Prabhu, **[0076]**: "The topology search is based upon*

an abstract model of the network in which groups of equivalent network nodes in the underlying network model are represented as vertices in a simplified network graph (with a given vertex representing a node group), and the connectivity between these groups is represented by edges in the graph").

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu in view of Ettle so that the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity. One would be motivated to do so because vertex are routine, conventional, and widely employed in a graph representation.

As per **claims 10 and 26**, which respectively depend on claims 9, and 25, Prabhu does not explicitly teach wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

Ettle teaches the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex *(see Prabhu, [**0166**]: "The route view 122 includes icons 128 representing the route nodes, labelled with node names, and circuit connections represented graphically as pipes 130 labelled with the connection type")*.

It would have been obvious to a person of ordinary skill in the art before the effective filing date of the invention to modify the system of Prabhu in view of Ettle so that the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex. One would be motivated to do so because vertex are routine, conventional, and widely employed in a graph representation.

Conclusion

6. For the reasons above, claims 1-31 have been rejected and remain pending.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL Y WON whose telephone number is (571)272-3993. The examiner can normally be reached on Wk.1: M-F: 8-5 PST & Wk.2: M-Th: 8-7 PST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice. Please **note**, the examiner generally will not hold interviews after a Final Office Action has been issued.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. 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.

MICHAEL WON
Primary Examiner
Art Unit 2449

/Michael Won/
Primary Examiner, Art Unit 2449
December 16, 2021

Notice of References Cited	Application/Control No. 17/161,190	Applicant(s)/Patent Under Reexamination SHEMESH et al.	
	Examiner MICHAEL Y WON	Art Unit 2449	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20040210654-A1	10-2004	Hrastar, Scott E.	H04L63/1408	709/224
*	B	US-20070147269-A1	06-2007	Ettle; David Roy	H04W16/18	370/254
*	C	US-20100223295-A1	09-2010	Stanley; Robert A.	G06F16/284	707/794
*	D	US-20100241698-A1	09-2010	Hillerbrand; Eric Thomas	G06F16/13	709/203
*	E	US-20130219009-A1	08-2013	Bheemarajaiah; Anand	H04L67/26	709/217
*	F	US-20140130008-A1	05-2014	AMULU; James Michael	G06F8/35	717/105
*	G	US-20160105350-A1	04-2016	Greifeneder; Bernd	H04L41/046	709/224
*	H	US-20160219117-A1	07-2016	MARLATT; Shaun P.	H04L67/322	1/1
*	I	US-20160352766-A1	12-2016	Flacher; Fabien	H04L67/10	1/1
*	J	US-20170140040-A1	05-2017	Gottemukkala; Chakri	G06Q10/067	1/1
*	K	US-20180261001-A1	09-2018	Wang; Qiaosong	G06T7/90	1/1
*	L	US-20190258756-A1	08-2019	Minwalla; Nosherwan	G06N20/20	1/1
*	M	US-20190258973-A1	08-2019	Prabhu; Devaraya	G06Q10/0637	1/1

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.

IPR2025-01084
Orca Security EX1002 Page 352

Notice of References Cited	Application/Control No. 17/161,190	Applicant(s)/Patent Under Reexamination SHEMESH et al.	
	Examiner MICHAEL Y WON	Art Unit 2449	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20200285977-A1	09-2020	Brebner; David	G06N5/022	1/1
*	B	US-20200320130-A1	10-2020	Korpman; Ralph A.	G06F16/9027	1/1
*	C	US-20200336376-A1	10-2020	Mahdi; Kaniz A.	G06N20/20	1/1
*	D	US-20210149858-A1	05-2021	Xia; Huang	G06F16/2282	1/1
*	E	US-20210174280-A1	06-2021	Ratnapuri; Thiruchelvan K	G06Q10/06315	1/1
*	F	US-5586254-A	12-1996	Kondo; Mariko	H04L41/0846	714/25
*	G	US-5926462-A	07-1999	Schenkel; David	H04L43/00	370/254
*	H	US-10862928-B1	12-2020	Badawy; Mohamed M.	H04L63/104	1/1
	I					
	J					
	K					
	L					
	M					

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.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	Art Unit
	MICHAEL Y WON	2449

CPC - Searched*		
Symbol	Date	Examiner
H04L43/045; G06F16/9024; H04L43/08; H04L67/10	12/16/2021	MW

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
PE2E SEARCH	12/16/2021	MW
INVENTOR/ASSIGNEE SEARCH	12/16/2021	MW
NPL SEARCH: DIALOG	12/17/2021	MW

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

IPR2025-01084
Orca Security EX1002 Page 354

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/161,190	SHEMESH et al.
	Examiner	Art Unit
	MICHAEL Y WON	2449

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	12/17/2021								
	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	✓								

IPR2025-01084
Orca Security EX1002 Page 355

Bibliographic Data

Application No: 17/161,190

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /Michael Won/ (Examiner's Signature) | (Initials)

Title: SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
01/28/2021	709	2449	WZIO P1933
RULE			

APPLICANTS

Wiz, Inc., Palo Alto, CA, UNITED STATES

INVENTORS

Daniel Hershko SHEMESH, Netanya, ISRAEL

Liran MOYSI, Kfar Saba, ISRAEL

Roy REZNIK, Tel Aviv, ISRAEL

Shai KEREN, Ramat Gan, ISRAEL

CONTINUING DATA

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

**** SMALL ENTITY ****

STATE OR COUNTRY

ISRAEL

ADDRESS

M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626
UNITED STATES

FILING FEE RECEIVED

$1,380

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	201700	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:27 PM
L2	60	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND genericiz$5	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:42 PM
L3	0	(H04L43/045 OR G06F16/9024 OR H04L43/08 OR H04L67/10).cpc. AND genericiz$5 AND (collect$4 OR gather$4 OR retriev$4) near10 characteristics AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:46 PM
L4	0	genericiz$5 AND (collect$4 OR gather$4 OR retriev$4) near10 characteristics AND	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU,	OR	ON	ON	2021/12/16 01:52 PM

IPR2025-01084
Orca Security EX1002 Page 357

		generat$4 near10 network near4 graph	CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L5	1	genericiz$5 AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:53 PM
L6	0	genericiz$5 near5 (collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:54 PM
L7	7	genericiz$5 near5 (collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN,	OR	ON	ON	2021/12/16 01:54 PM

IPR2025-01084
Orca Security EX1002 Page 358

			WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L8	35	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 01:58 PM
L9	6	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 network near4 graph near10 relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:03 PM
L10	2	generic near3 form AND (pulled OR collect$4 OR gather$4 OR retriev$4) AND generat$4 near10 (network near6 graph OR topology) near10 relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:04 PM
L11	81694	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2021/12/16 02:07 PM

IPR2025-01084
Orca Security EX1002 Page 359

			EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L12	4673	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:07 PM
L13	1967	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional AND stor$4 near6(graph OR model)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:08 PM
L14	1794	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO;	OR	ON	ON	2021/12/16 02:09 PM

			JPO; DERWENT; IBM_TDB)				
L15	327	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:09 PM
L16	143	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR generic)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:10 PM
L17	221	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/16 02:10 PM
L18	153	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:11 PM

IPR2025-01084
Orca Security EX1002 Page 361

		dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw))					
L19	143	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw)) AND network near4 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:22 PM
L20	116	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship near6 entit$3 AND multi-dimensional AND stor$4 near6(graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR (generic OR raw)) AND network near4 (device OR node OR entity OR module) AND (device OR node OR entity OR module) near3 (class OR type OR category OR configuration)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 02:24 PM
L21	164301	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) topolog$5 near5 network	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:31 PM
L22	1330	generat$4 near10	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16

		(network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 network					08:31 PM
L23	104489	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 networkand multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:33 PM
L24	110	generat$4 near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near4 (device OR node OR entity OR module) AND topolog$5 near5 network AND multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:33 PM
L25	532	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:38 PM
L26	422	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship AND (gather OR gathering	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:38 PM

		OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24					
L27	230	(discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:39 PM
L28	112	topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM
L29	3986517	network near6topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM
L30	57	network near6 topology AND (discover$4 OR generat$4) near10	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:49 PM

		(network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 NOT L24					
L31	1254	network near6 topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:54 PM
L32	18	network near6 topology AND (discover$4 OR generat$4) near10 (network near6 (graph OR model) OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 08:55 PM
L33	8	network near6 topology AND network near6 discovery AND (generat$4) near6 (graph OR model OR topology) AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:00 PM

		node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)					
L34	10466718	(creat$5 OR generat$5)network near6 topology AND network near6 discovery AND (graph OR model OR topology) near6 network AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:03 PM
L35	0	(creat$5 OR generat$5) near5 network near6 topology AND network near6 discovery AND (graph OR model OR topology) near6 network AND relationship near10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting OR receiv$4) near10 (device OR node OR entity OR module) AND multi-dimension$3 near10 (graph OR model)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:03 PM
L36	2194	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:05 PM
L37	179	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:06 PM

		model) near5 (user OR client) AND (multidimensional OR multi-dimensional)					
L38	1261503	collect	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:10 PM
L39	156	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client) AND (multidimensional OR multi-dimensional) AND (collect$4 OR gather$4 OR receiv$5 OR retriev$4) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:13 PM
L40	165	(creat$5 OR generat$5) near5 (topology OR graph OR model) near3 network AND (present$4 OR display$4) near5 (topology OR graph OR model) near5 (user OR client) AND (multidimensional OR multi-dimensional) AND (collect$4 OR gather$4 OR receiv$5 OR retriev$4 OR captur$4) near10 (device OR node OR entity OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 09:14 PM
L41	2457290	convert	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/16 10:20 PM
L42	17228	(model) WITH vertex WITH (entity OR device OR node OR module)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2021/12/17 12:24 AM

IPR2025-01084
Orca Security EX1002 Page 367

			IBM_TDB)				
L43	398	(model) WITH vertex WITH network near2 (entity OR device OR node OR module)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/12/17 12:24 AM
L44	39	(model) WITH vertex WITH network near2 (entity OR device OR node OR module)	(US-PGPUB; USPAT)	OR	ON	ON	2021/12/17 12:25 AM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

Dialog®

STIC
Scientific and Technical Information Center

Search Strategy from Dialog

December 17 2021 00:55

IPR2025-01084
Orca Security EX1002 Page 369

Search Strategy

Databases: Abstracts in New Technology & Engineering, Civil Engineering Abstracts, Earthquake Engineering Abstracts, Ei Compendex®, Inspec®, Mechanical & Transportation Engineering Abstracts, ProQuest Advanced Tech & Aerospace Professional, ProQuest Materials Research Professional, ProQuest Technology Research Professional

Set#	Searched for	Results
S1	(generat$4 near/10 (network near/6 (graph OR model) OR topology) AND relationship AND multi-dimensional)	299°
S2	(generat$4 near/10 (network near/6 (graph OR model) OR topology) AND relationship AND multi-dimensional) AND stor$4 near/6 (graph OR model)	35°
S3	(generat$4 near/10 (network near/6 (graph OR model) OR topology) AND relationship AND multi-dimensional) AND stor$4 near/6 (graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	34°
S4	(generat$4 near/10 (network near/6 (graph OR model) OR topology) AND relationship near/6 entit$4 AND multi-dimensional) AND stor$4 near/6 (graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4)	5°
S5	(generat$4 near/10 (network near/6 (graph OR model) OR topology) AND relationship near/6 entit$4 AND multi-dimensional) AND stor$4 near/6 (graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR generic)	1°
S6	generat$4 near/10 (network near/6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near/4 (device OR node OR entity OR module) AND topolog$5 near/5 network	177°
S7	generat$4 near/10 (network near/6 (graph OR model) OR topology) AND relationship near/6 entit$3 AND multi-dimensional AND stor$4 near/6 (graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR generic)	1°
S8	generat$4 near/10 (network near/6 (graph OR model) OR topology) AND relationship near/6 entit$3 AND multi-dimensional AND stor$4 near/6 (graph OR model) AND (pull$4 OR collect$4 OR gather$4 OR retriev$4) AND (genericiz$5 OR generic)	1°
S9	generat$4 near/10 (network near/6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near/4 (device OR node OR entity OR module) AND topolog$5 near/5 network	177°
S10	generat$4 near/10 (network near/6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near/4 (device OR node OR entity OR	11°

IPR2025-01084
Orca Security EX1002 Page 370

	module) AND topolog$5 near/5 network AND multi-dimension$3	
S11	(discover$4 OR generat$4) near/10 (network near/6 (graph OR model) OR topology) AND relationship AND (gather OR gathering OR collect OR collecting) near/10 (device OR node OR entity OR module) AND multi-dimension$3	40°
S12	(discover$4 OR generat$4) near/10 (network near/6 (graph OR model) OR topology) AND relationship near/10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near/10 (device OR node OR entity OR module) AND multi-dimension$3	16°
S13	topology AND (discover$4 OR generat$4) near/10 (network near/6 (graph OR model) OR topology) AND relationship near/10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near/10 (device OR node OR entity OR module) AND multi-dimension$3	15°
S14	topology AND (discover$4 OR generat$4) near/10 (network near/6 (graph OR model) OR topology) AND relationship near/10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near/10 (device OR node OR entity OR module) AND multi-dimension$3	15°
S15	network near/6 topology AND (discover$4 OR generat$4) near/10 (network near/6 (graph OR model) OR topology) AND relationship near/10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near/10 (device OR node OR entity OR module) AND multi-dimension$3	14°
S16	(network near/6 topology AND (discover$4 OR generat$4) near/10 (network near/6 (graph OR model) OR topology) AND relationship near/10 (device OR node OR entity OR module) AND (gather OR gathering OR collect OR collecting) near/10 (device OR node OR entity OR module) AND multi-dimension$3 near/10 (graph OR model))	0°

° Duplicates are removed from the search and from the result count.

IPR2025-01084
Orca Security EX1002 Page 371

Contact ProQuest
Copyright © 2021 ProQuest LLC. All rights reserved. - Terms and Conditions

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
17/161,190	01/28/2021	Daniel Hershko SHEMESH	WZIO P1933

CONFIRMATION NO. 6419

122066
M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

37 CFR 1.48(f)
ACKNOWLEDGEMENT LETTER

OC000000130183155

Date Mailed: 12/03/2021

NOTICE OF ACCEPTANCE OF REQUEST UNDER 37 CFR 1.48(f)

This is in response to the applicant's request under 37 CFR 1.48(f) submitted on 11/22/2021.

The request under 37 CFR 1.48(f) to correct the inventorship, to correct or update the name of an inventor, or to correct the order of names of joint inventors is accepted.

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**.

/byemane/

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
17/161,190	01/28/2021	2449	1380	WZIO P1933	31	3

CONFIRMATION NO. 6419

UPDATED FILING RECEIPT

122066
M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

OC000000130183153

Date Mailed: 12/03/2021

Receipt is acknowledged of this non-provisional utility 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 FIRST INVENTOR, 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 corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction 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 provided that the request is grantable.

Inventor(s)

Daniel Hershko SHEMESH, Netanya, ISRAEL;
Liran MOYSI, Kfar Saba, ISRAEL;
Roy REZNIK, Tel Aviv, ISRAEL;
Shai KEREN, Ramat Gan, ISRAEL;

Applicant(s)

Wiz, Inc., Palo Alto, CA;

Assignment For Published Patent Application

Wiz, Inc., Palo Alto, CA

Power of Attorney: None

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.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

Projected Publication Date: Request for Non-Publication Acknowledged

Non-Publication Request: Yes

Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Preliminary Class

709

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

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

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

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

NOT GRANTED

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

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

IPR2025-01084
Orca Security EX1002 Page 377



United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :C46539

Sale Accounting Date:11/23/2021

Sale Item Reference Number	Effective Date
17161190	11/22/2021

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I2021AME10030084	2830	PROCESSING FEE, EXCEPT PROV. APPLS.	$70.00	Deposit Account

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Daniel Hershko SHEMESH et al
Serial No.	:	17/161,190
Filed	:	January 28 2021
Attorney Docket No.:		WZIO P1933
Examiner	:	TBA
Group Art Unit	:	TBA
Confirmation No.	:	6419

Office of Patent Examination Filing Receipt Corrections
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

May 20, 2021

REQUEST FOR A CORRECTED FILING RECEIPT

Sir:

It is respectfully requested that the Office revise an inventor's name.

Specifically, the inventor's name should be "**Daniel Hershko SHEMESH**".

Additionally, Applicants hereby submit an amended Application Data Sheet and Official Filing Receipt.

Any fee due with this paper, not already paid through an EFS-Web filing, may be charged to Deposit Account No. 50-6438. Any overpayment may be credited to Deposit Account No. 50-6438.

Respectfully submitted,

M&B IP Analysts, LLC

/Michael Ben-Shimon/
Michael Ben-Shimon
Reg. No.: 69,610

Mail all correspondence to:
CUSTOMER NO.: 122066
M&B IP Analysts, LLC
908-274-3111

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
17/161,190	01/28/2021		1380	WZIO P1933	31	3

CONFIRMATION NO. 6419

FILING RECEIPT

122066
M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

OC000000123895928

Date Mailed: 03/09/2021

Receipt is acknowledged of this non-provisional utility 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 FIRST INVENTOR, 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 corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction 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 provided that the request is grantable.

Inventor(s)

~~Danny SHEMESH~~, Netanya, ISRAEL; **Daniel Hershko SHEMESH**
Liran MOYSI, Kfar Saba, ISRAEL;
Roy REZNIK, Tel Aviv, ISRAEL;
Shai KEREN, Ramat Gan, ISRAEL;

Applicant(s)

Wiz, Inc., Palo Alto, CA;

Assignment For Published Patent Application

Wiz, Inc., Palo Alto, CA

Power of Attorney: None

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.

Permission to Access Application via Priority Document Exchange: Yes

IPR2025-01084
Orca Security EX1002 Page 380

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/08/2021
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/161,190**
Projected Publication Date: Request for Non-Publication Acknowledged
Non-Publication Request: Yes
Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Preliminary Class

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative,

this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

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

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

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

NOT GRANTED

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

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

IPR2025-01084
Orca Security EX1002 Page 383

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

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
	~~Danny~~ Daniel	Hershko	SHEMESH	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Netanya	Country of Residence	IL

Mailing Address of Inventor:

Address 1	c/o Wiz, Inc.		
Address 2	2345 Yale Street		
City	Palo Alto	**State/Province**	CA
Postal Code	94306	**Country**	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Liran		MOYSI	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Kfar Saba	Country of Residence	IL

Mailing Address of Inventor:

Address 1	c/o Wiz, Inc.		
Address 2	2345 Yale Street		
City	Palo Alto	**State/Province**	CA
Postal Code	94306	**Country**	US

Inventor 3 Remove

Legal Name

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

Prefix	Given Name	Middle Name	Family Name	Suffix
	Roy		REZNIK	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Tel Aviv	Country of Residence	IL

Mailing Address of Inventor:

Address 1	c/o Wiz, Inc.		
Address 2	2345 Yale Street		
City	Palo Alto	**State/Province**	CA
Postal Code	94306	**Country**	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Shai		KEREN	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Ramat Gan	Country of Residence	IL

Mailing Address of Inventor:

Address 1	c/o Wiz, Inc.		
Address 2	2345 Yale Street		
City	Palo Alto	**State/Province**	CA
Postal Code	94306	**Country**	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	122066		
Email Address	pair@mb-ip.com	Add Email	Remove Email

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

Application Information:

Title of the Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES		
Attorney Docket Number	WZIO P1933	**Small Entity Status Claimed** ☒	
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	8	**Suggested Figure for Publication (if any)**	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

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	122066		

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim 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.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)

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

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(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[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

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

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is 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 State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

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

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	Wiz, Inc.

Mailing Address Information For Applicant:

Address 1	2345 Yale Street		
Address 2			
City	Palo Alto	**State/Province**	CA
Country	US	Postal Code	94306
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button.

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.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

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.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☒

Organization Name	Wiz, Inc.

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1	2345 Yale Street		
Address 2			
City	Palo Alto	**State/Province**	CA
Country	US	Postal Code	94306
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Michael Ben-Shimon/			Date (YYYY-MM-DD)	2021-01-28
First Name	Michael	Last Name	Ben-Shimon	Registration Number	69610

Additional Signature may be generated within this form by selecting the Add button.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

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 CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

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

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	44326891
Application Number:	17161190
International Application Number:	
Confirmation Number:	6419
Title of Invention:	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES
First Named Inventor/Applicant Name:	Danny SHEMESH
Customer Number:	122066
Filer:	Michael Ben-Shimon/Catherine Hodic
Filer Authorized By:	Michael Ben-Shimon
Attorney Docket Number:	WZIO P1933
Receipt Date:	22-NOV-2021
Filing Date:	28-JAN-2021
Time Stamp:	16:43:39
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	Request for Corrected Filing Receipt	WZIO_P1933_request_for_corrected_ofr_20211119_.pdf	3127053 4c913b72e637c3c96706e91c9d680ca917e0b359	no	5

Warnings:

Information:					
2	Application Data Sheet	WZIO_P1933_amended_ads_20211119-.pdf	3227178 7c757db6fe4236a635d227a82cc3523f1f30bff4	no	9
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
			Total Files Size (in bytes):	6354231	

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.

Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

As a below named inventor (designated as "the undersigned"), I hereby declare that:

This assignment is directed to: ☐ The attached application, or

☒ United States Application or PCT International Application Number **17/161,190** filed on **28 January 2021**

The application is entitled:

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

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 have reviewed and understand the contents of the above-identified application.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

POWER OF ATTORNEY: I hereby appoint all practitioners of **M&B IP ANALYSTS, LLC** who are listed under the USPTO Customer Number shown below as my practitioners to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith.

Address all correspondence to **CUSTOMER NUMBER 122066**.

The undersigned hereby acknowledges 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.

ASSIGNMENT

WHEREAS, **Wiz, Inc.** having an address at **2345 Yale Street Palo Alto, CA 96306 United States** (hereinafter "ASSIGNEE"), is desirous of acquiring the entire right, title and interest in, to and under the above-identified application and invention, and to any Letters Patent(s) that may be granted therefor.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the undersigned has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, the entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventor's certificates and designs

Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

The undersigned authorizes and requests the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

The undersigned covenants and agrees that he has full right to convey the entire interest herein assigned, and has not executed, and will not execute, any agreement in conflict herewith.

The undersigned further covenants and agrees that he will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The undersigned hereby grants the practitioners of **M&B IP Analysts, LLC** the power to insert any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

In witness whereof, executed by the undersigned on the date below the undersigned name.

Inventor's Printed Name in English:	Daniel Hershko SHEMESH
Inventor's Residence:	Givat Shmuel Israel
Inventor's Signature:	DocuSigned by: / _____ /
Date:	11/21/2021 48F7285C7A894A3...

Electronic Acknowledgement Receipt	
EFS ID:	44336730
Application Number:	17161190
International Application Number:	
Confirmation Number:	6419
Title of Invention:	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES
First Named Inventor/Applicant Name:	Danny SHEMESH
Customer Number:	122066
Filer:	Michael Ben-Shimon/Catherine Hodic
Filer Authorized By:	Michael Ben-Shimon
Attorney Docket Number:	WZIO P1933
Receipt Date:	22-NOV-2021
Filing Date:	28-JAN-2021
Time Stamp:	16:41:12
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	Oath or Declaration filed	WZIO_P1933_Declaration_assignment_Daniel_Signed_20211119.pdf	225001 47fe4871eb9f209cc58d7be2ef1e93f955d73ea2	no	2

Warnings:

The PDF file has been signed with a digital signature and the legal effect of the document will be based on the contents of the file not the digital signature.	
Information:	
Total Files Size (in bytes):	225001

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
17/161,190	01/28/2021		1380	WZIO P1933	31	3

CONFIRMATION NO. 6419

FILING RECEIPT

122066
M&B IP Analysts, LLC
150 Morristown Road
Suite 205
Bernardsville, NJ 07924-2626

OC000000123895928

Date Mailed: 03/09/2021

Receipt is acknowledged of this non-provisional utility 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 FIRST INVENTOR, 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 corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction 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 provided that the request is grantable.

Inventor(s)

Danny SHEMESH, Netanya, ISRAEL;
Liran MOYSI, Kfar Saba, ISRAEL;
Roy REZNIK, Tel Aviv, ISRAEL;
Shai KEREN, Ramat Gan, ISRAEL;

Applicant(s)

Wiz, Inc., Palo Alto, CA;

Assignment For Published Patent Application

Wiz, Inc., Palo Alto, CA

Power of Attorney: None

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.

Permission to Access Application via Priority Document Exchange: Yes

IPR2025-01084
Orca Security EX1002 Page 399

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/08/2021
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/161,190**
Projected Publication Date: Request for Non-Publication Acknowledged
Non-Publication Request: Yes
Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

Preliminary Class

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative,

this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

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

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

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

NOT GRANTED

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

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

IPR2025-01084
Orca Security EX1002 Page 402

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 17/161,190

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	80		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	350		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	400		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	31 minus 20 =	* 11	x 50 =	550	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x 240 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	1380		TOTAL	

APPLICATION AS AMENDED - PART II

AMENDMENT A

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

AMENDMENT B

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

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

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

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

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

PTO/AIA/15 (10-17)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	WZIO P1933
First Named Inventor	Danny SHEMESH
Title	SYSTEM AND METHOD FOR GENERATION OF UNIFIED...
Priority Mail Express® Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☐ **Fee Transmittal Form** (PTO/SB/17 or equivalent)
2. ☑ **Applicant asserts small entity status.** See 37 CFR 1.27
3. ☐ **Applicant certifies micro entity status.** See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.
4. ☑ **Specification** [*Total Pages* 39] Both the claims and abstract must start on a new page. *(See MPEP § 608.01(a) for information on the preferred arrangement)*
5. ☑ **Drawing(s)** (35 U.S.C. 113) [*Total Sheets* 8]
6. **Inventor's Oath or Declaration** [*Total Pages* 3] *(including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e))*
   a. ☑ Newly executed (original or copy)
   b. ☐ A copy from a prior application (37 CFR 1.63(d))
7. ☑ **Application Data Sheet** ** See note below.* See 37 CFR 1.76 (PTO/AIA/14 or equivalent)
8. **CD-ROM or CD-R** in duplicate, large table, or Computer Program (*Appendix*)
   ☐ Landscape Table on CD
9. **Nucleotide and/or Amino Acid Sequence Submission** (*if applicable, items a. – c. are required*)
   a. ☐ Computer Readable Form (CRF)
   b. ☐ Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

ADDRESS TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

ACCOMPANYING APPLICATION PAPERS

10. ☐ **Assignment Papers** (cover sheet & document(s)) Name of Assignee _____
11. ☐ **37 CFR 3.73(c) Statement** (*when there is an assignee*) ☐ **Power of Attorney**
12. ☐ **English Translation Document** (*if applicable*)
13. ☐ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449) ☐ Copies of citations attached
14. ☐ **Preliminary Amendment**
15. ☐ **Return Receipt Postcard** (*MPEP § 503*) (*Should be specifically itemized*)
16. ☐ **Certified Copy of Priority Document(s)** (*if foreign priority is claimed*)
17. ☑ **Nonpublication Request** Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
18. ☑ **Other:** 1)ECOMM.AUTH/ECOMM.WTDW - Form: PTO/SB/439; 2)Authorization to Charge Deposit Account - Letter

***Note**: (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 **must** be included in an Application Data Sheet (ADS).
(2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).

19. CORRESPONDENCE ADDRESS

☑ The address associated with Customer Number: 122066 **OR** ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone		Email	

Signature	/Michael Ben-Shimon/	Date	2021-01-28
Name (Print/Type)	Michael Ben-Shimon	Registration No. (Attorney/Agent)	69610

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Privacy Act Statement

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

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

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

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

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
	Danny		SHEMESH	

Residence Information (Select One) US Residency ● Non US Residency Active US Military Service

City	Country of Residence [i]
Netanya	IL

Mailing Address of Inventor:

Address 1	c/o Wiz, Inc.
Address 2	2345 Yale Street
City	Palo Alto
State/Province	CA
Postal Code	94306
Country [i]	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Liran		MOYSI	

Residence Information (Select One) US Residency ◉ Non US Residency Active US Military Service

City	Country of Residence [i]
Kfar Saba	IL

Mailing Address of Inventor:

Address 1	c/o Wiz, Inc.
Address 2	2345 Yale Street
City	Palo Alto
State/Province	CA
Postal Code	94306
Country [i]	US

Inventor 3 Remove

Legal Name

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

Prefix	Given Name	Middle Name	Family Name	Suffix
	Roy		REZNIK	

Residence Information (Select One) US Residency ◉ Non US Residency Active US Military Service

City	Tel Aviv	Country of Residence [i]	IL

Mailing Address of Inventor:

Address 1	c/o Wiz, Inc.		
Address 2	2345 Yale Street		
City	Palo Alto	State/Province	CA
Postal Code	94306	Country [i]	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Shai		KEREN	

Residence Information (Select One) US Residency ◉ Non US Residency Active US Military Service

City	Ramat Gan	Country of Residence [i]	IL

Mailing Address of Inventor:

Address 1	c/o Wiz, Inc.		
Address 2	2345 Yale Street		
City	Palo Alto	State/Province	CA
Postal Code	94306	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	122066		
Email Address	pair@mb-ip.com	Add Email	Remove Email

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

Application Information:

Title of the Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES		
Attorney Docket Number	WZIO P1933	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	8	**Suggested Figure for Publication (if any)**	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

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	122066		

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim 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.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) 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. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(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[i] (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.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is 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 State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

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	Wiz, Inc.		
Mailing Address Information For Applicant:			
Address 1	2345 Yale Street		
Address 2			
City	Palo Alto	**State/Province**	CA
Country	US	Postal Code	94306
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.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

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 or Non-Applicant Assignee is an Organization check here. ☒

Organization Name	Wiz, Inc.

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1	2345 Yale Street		
Address 2			
City	Palo Alto	**State/Province**	CA
Country i	US	Postal Code	94306
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Michael Ben-Shimon/			Date (YYYY-MM-DD)	2021-01-28
First Name	Michael	Last Name	Ben-Shimon	Registration Number	69610

Additional Signature may be generated within this form by selecting the Add button. Add

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	WZIO P1933
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES	

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 CooperationTreaty.

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.

Attorney Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

As a below named inventor (designated as "the undersigned"), I hereby declare that:

This declaration is directed to: ☒ The attached application, or

☐ United States Application No.__ filed on _

The application is entitled:

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

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 have reviewed and understand the contents of the above-identified application.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

POWER OF ATTORNEY: I hereby appoint all attorneys and agents of **M&B IP ANALYSTS, LLC** who are listed under the USPTO Customer Number shown below as my attorneys to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith.

Address all correspondence to **CUSTOMER NUMBER 122066**.

The undersigned hereby acknowledges 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.

ASSIGNMENT

WHEREAS, **Wiz, Inc.**, having an address at **2345 Yale Street, Palo Alto, California 94306 USA** (hereinafter "ASSIGNEE"), is desirous of acquiring the entire right, title and interest in, to and under the above-identified application and invention, and to any Letters Patent(s) that may be granted therefor.
NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the undersigned has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, the entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventor's certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

Attorney Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

The undersigned authorizes and requests the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

The undersigned covenants and agrees that he has full right to convey the entire interest herein assigned, and has not executed, and will not execute, any agreement in conflict herewith.

The undersigned further covenants and agrees that he will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The undersigned hereby grants the practitioners of M&B IP Analysts, LLC the power to insert any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

In witness whereof, executed by the undersigned on the date opposite the undersigned name.

1. Full name of joint inventor: **Danny SHEMESH**

Inventor's Signature: / DocuSigned by: 48F7285C7A894A3... ***/ Date:*** 1/13/2021

Residence: Netanya, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

2. Full name of joint inventor: **Liran MOYSI**

Inventor's Signature: / ***/ Date:*** 1/16/2021

Residence: Kfar Saba, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

3. Full name of joint inventor: **Roy REZNIK**

Inventor's Signature: / DocuSigned by: ***/ Date:*** 1/13/2021

Residence: Tel Aviv, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

Attorney Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

4. Full name of joint inventor: **Shai KEREN**

Inventor's Signature: /  ***/ Date:*** 01/16/2021

Residence: Ramat Gan, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Danny SHEMESH	Attorney Docket No.: WZIO P1933
Application No.: N/A	Group Art Unit: N/A
Filed: 2021-01-28	Confirmation Number: N/A
Customer No.: 122066	Examiner: N/A

Title: SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

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

Authorization to Charge Deposit Account

Commissioner:

In accordance with the Non-Provisional Application submitted herewith, the Director is hereby authorized to charge additional fees which may be required, or credit any overpayment to, deposit account **50-6438**.

Respectfully submitted,

Date January 28, 2021

By: /Michael Ben-Shimon/
Michael Ben-Shimon
Reg. No. 69,610

PTO/SB/35 (07-09)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U. S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

NONPUBLICATION REQUEST UNDER 35 U.S.C. 122(b)(2)(B)(i)

First Named Inventor	Danny SHEMESH
Title	SYSTEM AND METHOD FOR GENERATION OI
Attorney Docket Number	WZIO P1933

I hereby 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.

I hereby request that the attached application not be published under 35 U.S.C. 122(b).

/Michael Ben-Shimon/ — Signature

January 28, 2021 — Date

Michael Ben-Shimon — Typed or printed name

69610 — Registration Number, if applicable

908-274-3111 — Telephone Number

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing.**

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

This collection of information is required by 37 CFR 1.213(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Privacy Act Statement

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

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

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

Doc Code: ECOMM.AUTH/ECOMM.WTDW
Doc Description: Internet Communications Authorized/Internet Communications Authorization Withdrawn

PTO/SB/439 (11-15)

AUTHORIZATION FOR INTERNET COMMUNICATIONS IN A PATENT APPLICATION OR REQUEST TO WITHDRAW AUTHORIZATION FOR INTERNET COMMUNICATIONS		
	Application No.	
	Filing Date	January 28, 2021
	First Named Inventor	Danny SHEMESH
	Art Unit	
	Examiner Name	
	Practitioner Docket No.	WZIO P1933

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

I. To authorize permission for Internet Communications.

☑ Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned and practitioners in accordance with 37 CFR 1.33 and 37 CFR 1.34 concerning any subject matter of this application via video conferencing, instant messaging, or electronic mail. I understand that a copy of these communications will be made of record in the application file. (MPEP 502.03)

II. To withdraw authorization for Internet Communications.

☐ The authorization given on _____, to the USPTO to communicate with the undersigned and any practitioner in accordance with 37 CFR 1.33 and 37 CFR 1.34 concerning any subject matter of this application via Internet communications such as video conferencing, instant messaging, or electronic mail is hereby withdrawn. I understand that the withdrawal is effective when approved rather than when received.

I am the

☐ applicant.

☑ attorney or agent of record. Registration number 69610.

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

/Michael Ben-Shimon/ — Signature

1/28/2021 — Date

Michael Ben-Shimon — Typed or printed name

908-274-3111 — Telephone Number

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Juristic entities must be represented by a patent practitioner (see 37 CFR 1.31, which is applicable to any paper filed on or after September 16, 2012, that is presented on behalf of a juristic entity, regardless of application filing date). Submit multiple forms if more than one signature is required, see below*.

☐ * Total of _____ forms are submitted.

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.

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

TECHNICAL FIELD

[0001] The present disclosure relates generally to cybersecurity, and, in particular, to systems and methods for automated generation of unified graph models for network entities.

BACKGROUND

[0002] As users, including large organizations such as businesses and governments, increase deployment of large-scale computing systems for data management, application processing, and other purposes, the same users may seek to better understand the technologies included in such systems, as well as the vulnerabilities thereof. As large-scale computing systems, such as configurations implemented through cloud service providers, such as Microsoft Azure® and Amazon AWS®, may include large numbers of components, devices, systems, and the like, including various types and deployments of each, and as connections between such components, devices, and systems may be similarly numerous and varied, users, administrators, and other interested parties may seek solutions providing for simple, unified understandings of the technologies included in such computing environments.

[0003] Current solutions to the analysis of the various systems, services, and the like, which may be included in a computing environment, include solutions directed to the analysis of live or recorded network traffic. Such traffic analysis systems provide for identification of activity within a network, but may fail to represent all components of a computing environment, such as those components which are not actively engaged in network communications during a traffic sampling period. Further, traffic-independent solutions, such as solutions directed to the identification of environment components, and connections therebetween, may provide for a more comprehensive understanding of the components and structure of a network or environment, but may fail to provide for generation of simple, unified views, particularly where networks, environments, and the like, include multiple, similar network components requiring separate analysis and

IPR2025-01084
Orca Security EX1002 Page 423

representation. In addition, solutions directed to the identification of environment components and connections may provide for the representation of such environment features, but fail to provide such a representation in a graph format, preventing the execution of graph-specific commands and queries across such datasets.

[0004] Where a user's computing environment includes multiple, similar network components, such as dissimilar objects providing similar functionalities, current traffic-independent solutions may fail to provide concise, efficient rendition of such objects in a simplified network view. As a computing environment may include objects drawn from multiple sources which are configured to provide similar functionalities, such as native firewall objects included in Azure® and AWS® configurations, current traffic-independent network analysis systems may require separate analysis and representation of each object, reducing analysis efficiency and increasing cost. Further, where such objects may be "implicit" from a network analysis perspective, such as various traffic management devices incorporated into a cloud platform host system, rather than a user's platform deployment, such implicit objects may not be exposed to an analytic system for representation in a simplified view. As a result, current traffic-independent solutions may fail to provide for the analysis and representation of such objects, where analysis and representation may be necessary to provide a thorough understanding of network or environment components and structures.

[0005] Further, in addition to such deficiencies of current traffic-independent solutions, such solutions fail to provide for the integrated representation and analysis of both "explicit" and "implicit" objects, as well as objects included in different layers of a computing environment. As a computing environment may include both "explicit" and "implicit" objects, such as, for example, infrastructure as a service (IaaS) deployments which include visible VMs, network interfaces, storage modules, and the like, and platform as a service (PaaS) deployments which include the same objects at the platform level, rendering such objects "implicit," analysis of such environments may require analysis of both "explicit" and "implicit" objects. However, current traffic-independent solutions fail to provide for the analysis of both types of objects, preventing the generation of network representations which provide for the inclusion and analysis of all relevant objects. Further, where an organization's computing environment includes objects and entities

dispersed across multiple layers, current traffic-independent solutions fail to provide for the representation of all objects or entities in a single view or depiction, where such a unified view may provide for enhanced network analysis and complex querying, as well as other functionalities.

[0006] It would therefore be advantageous to provide a solution that would overcome the challenges noted above.

SUMMARY

[0007] A summary of several example embodiments of the disclosure follows. This summary is provided for the convenience of the reader to provide a basic understanding of such embodiments and does not wholly define the breadth of the disclosure. This summary is not an extensive overview of all contemplated embodiments and is intended to neither identify key or critical elements of all embodiments nor to delineate the scope of any or all aspects. Its sole purpose is to present some concepts of one or more embodiments in a simplified form as a prelude to the more detailed description that is presented later. For convenience, the terms “some embodiments” or “certain embodiments” may be used herein to refer to a single embodiment or multiple embodiments of the disclosure.

[0008] Certain embodiments disclosed herein include a method for generation of unified graph models for network entities. The method comprises collecting, for at least one network entity of a plurality of network entities, at least one network entity data feature, wherein the at least one network entity data feature is a network entity property; genericizing the collected at least one network entity; generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and storing the generated at least a network graph.

[0009] Certain embodiments disclosed herein also include a non-transitory computer readable medium having stored thereon instructions for causing a processing circuitry to execute a process for generation of unified graph models for network entities, the process comprising: collecting, for at least one network entity of a plurality of network entities, at least one network entity data feature, wherein the at least one network entity data feature

is a network entity property; genericizing the collected at least one network entity; generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and storing the generated at least a network graph.

[0010] In addition, certain embodiments disclosed herein include a system for generation of unified graph models for network entities. The system comprises: a processing circuitry; and a memory, the memory containing instructions that, when executed by the processing circuitry, configure the system to: collect, for at least one network entity of a plurality of network entities, at least one network entity data feature, wherein the at least one network entity data feature is a network entity property; genericize the collected at least one network entity; generate at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and store the generated at least a network graph.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The subject matter disclosed herein is particularly pointed out and distinctly claimed in the claims at the conclusion of the specification. The foregoing and other objects, features, and advantages of the disclosed embodiments will be apparent from the following detailed description taken in conjunction with the accompanying drawings.

[0012] Fig. 1A is a diagram of a cloud environment utilized to describe the various embodiments.

[0013] Fig. 1B is a network diagram depicting a network system and various associated network and external entities utilized to describe the various embodiments.

[0014] Fig. 2 is a flowchart depicting a method for generating unified graph models for network entities, according to an embodiment.

[0015] Fig. 3 is a network graph visualization, according to an embodiment.

[0016] Fig. 4 is an illustration of the genericization of a network entity, utilized to describe the various embodiments.

[0017] Fig. 5A is an interactive graph analysis platform, provided through a user interface (UI), according to an embodiment.

[0018] Fig. 5B is an interactive graph analysis platform, provided through a user interface (UI), according to an embodiment.

[0019] Fig. 6 is a hardware block diagram depicting a graph analysis system, according to an embodiment.

DETAILED DESCRIPTION

[0020] It is important to note that the embodiments disclosed herein are only examples of the many advantageous uses of the innovative teachings herein. In general, statements made in the specification of the present application do not necessarily limit any of the various claimed embodiments. Moreover, some statements may apply to some inventive features but not to others. In general, unless otherwise indicated, singular elements may be in plural and vice versa with no loss of generality. In the drawings, like numerals refer to like parts through several views.

[0021] The systems and methods described herein may be applicable to various systems, devices, networks, environments, layers, and the like, as well as cross-connections or multi-entity connections as may be established therebetween. The disclosed systems and methods may be applicable to provide support for various network features including, without limitation, application-layer communications, cloud-native constructs, cross-cloud and Kubernetes-to-cloud communications, third-party features, such as third-party containers and entities, container-management systems, such as Kubernetes, as may be virtualized as cloud entities, and the like, as well as any combination thereof.

[0022] Further, the systems and methods described herein may be applicable to various network graph models, and applications thereof. The systems and methods described herein may be relevant to unified graph models configured to represent network components from deployments and configurations including, without limitation infrastructure as a service (Iaas) deployments, platform as a service (PaaS) deployments, Kubernetes(R) deployments, multi-cloud configurations, other, like, deployments and configurations, and any combination thereof, including applications relevant to the modeling of cloud elements including, without limitation transit gateways, shared virtual

private clients (VPCs), private links, and the like, as well as any combination thereof. Such relevant network graph models may be unified across all cloud environments, computing devices, services, and the like, including, without limitation, AWS® lambda services which are exposed to users, MongoDB® instances running on a container or PaaS database, and the like, as well as any combination thereof. Further, such network graph models may be configured to represent cloud implementations including, without limitation, security-group-based firewall rules, tag-based firewall rules, and the like, as well as any combination thereof. Such network graph models may be configured to include structures and features relevant to the maximization of model efficiency, the maximization of model-element visibility, and the implementation of various query languages, where such structures and features may include, without limitation, minimization of edges and nodes in a model, elimination of redundant edges, and the like, as well as any combination thereof.

[0023] Fig. 1A is an example diagram of a cloud environment 103 utilized to describe the various disclosed embodiments. A cloud environment 103 represents an organization's cloud-based resources, and the various connections between such resources. The cloud environment 103 may include a number of cloud computing platforms, 104-1 through 104-n (hereinafter, "cloud platforms" 104 or "cloud platform" 104), where a cloud platform may include multiple network entities, 105-1 through 105-n (hereinafter, "network entities" 105 or "network entity" 105), one or more applications (collectively referred to as applications or apps 106), and the like, as well as any combination thereof. Further, the cloud environment 103 may be configured to connect, via a network 108, with a graph analysis system 150, and a graph database 160, for one or more purposes including, without limitation, those described hereinbelow. As is applicable to the cloud platforms 104 and network entities 105, "n" is an integer having a value greater than or equal to two. Further, it may be understood that, while a single configuration of a cloud environment 103 is shown for purposes of simplicity, a cloud environment 103 may include various combinations of platforms 104, entities 105, applications 106, and the like, as well as any combination thereof, without loss of generality or departure from the scope of the disclosure.

[0024] A cloud platform 104 is a platform, architecture, or other, like, configuration providing for connectivity of the various entities 105, applications 106, and other, like, elements included in a cloud platform 104, as well as the execution of various processes, instructions, and the like. A cloud platform 104 may be a commercially-available cloud system, provided on a service basis, such as, as examples and without limitation, Amazon AWS®, Microsoft Azure®, and the like. A cloud platform 104 may be a private cloud, a public cloud, a hybrid cloud, and the like. In addition, a cloud platform 104 may include, without limitation, container orchestration or management systems or platforms such as, as an example and without limitation, a Kubernetes deployment, and the like, as well as any combination thereof.

[0025] A cloud platform 104 may be implemented as a physical network of discrete, interconnected entities, and the like, a virtual network, providing for interconnection of various virtual systems and devices, as well as a hybrid physical-virtual network, including both physical and virtualized components. A cloud platform 104 may be, or may replicate or otherwise simulate or emulate, as examples, and without limitation, a local area network, a wide area network, the Internet, the World-Wide Web (WWW), and the like, as well as any combination thereof. Further, a cloud platform 104 may include one or more subnets, such as the subnets, 130, of Fig. 1B, below, wherein each subnet may be configured to serve as a cloud platform 104 for the various network entities which may be included in the subnet, while retaining the connectivity and functionalities provided by the cloud platform 104.

[0026] Network entities 105, as may be included in a cloud platform 104, are entities, systems, devices, components, applications, objects, and the like, configured to operate within the cloud platform 104 and provide various functionalities therein. Specifically, the network entities 105 may be, as examples without limitation, entities configured to process data, send data, or receive data, as well as entities configured to provide various other functionalities, and any combination thereof. The network entities 105 may be configured to connect with various other network entities 105, various external entities, and the like, as well as any combination thereof, for purposes including, without limitation, sending data, receiving data, monitoring data transmissions, monitoring network status and activity, and the like, as well as any combination thereof.

[0027] Examples of network entities 105 include, without limitation, entities providing support for application-layer communications and systems, including application-layer communications and systems relevant to layer seven of the open systems interconnection (OSI) model. Further examples of network entities 105 may include cloud-native constructs, such as private endpoints, transit gateways, tag-based rulesets and entities configured to apply such rules, Kubernetes Istio and Calico services and applications, and the like. In addition, examples of network entities 105 may include, without limitation, third-party containers and images, such as Nginx, web-access firewall (WAF), and firewall implementations, multi-entity or cross-entity connections, such as cross-cloud connections and Kubernetes-to-cloud connections, as well as container managers, such as Kubernetes, and connections therewith. It may also be understood that network entities 105 may include other entities similar to those described hereinabove, as well as any combination thereof. As another example, network entities 105 may include virtual entities, devices, and the like, to process layer-7 (application layer) traffic, such as entities relevant to Amazon AWS® layer seven services and applications, Amazon Load Balancer® (ALB) layer seven services and applications, Kubernetes ingress, and the like.

[0028] The network entities 105 may be configured to include one or more communication ports, where the included communication ports provide for connection of various entities according to one or more protocols, and at different communication layers of the OSI model.

[0029] In an example configuration, the network entities 105 are virtual entities or instances of systems, devices, or components, including virtual systems, devices, or components, or any combination thereof. Examples of network entities 105 include, without limitation, virtual networks, firewalls, network interface cards, proxies, gateways, containers, container management objects, virtual machines, subnets 130, hubs, virtual private networks (VPNs), and the like, as well as any combination thereof.

[0030] The applications 106 (or cloud applications), as may be executed in one or more cloud platforms 104, are services, processes, and the like, configured to provide one or more functionalities by execution of various commands and instructions. The applications 106 may be part of a software project of an enterprise or organization. The applications 106 may interact or communicate with other applications 106, regardless of the platform 104

in which the applications 106 are deployed. Examples of applications 106 include, without limitation, databases, serverless functions, web servers, buckets, and the like, as well as any combination thereof. It should be understood that multiple instances of a single application 106 may be both present and executed in multiple cloud platforms 104, including multiple cloud platforms 104 of the same cloud environment 103, without loss of generality or departure from the scope of the disclosure.

[0031] The network 108 is a communication system providing for the connection of the cloud environment 103, and its various components and sub-parts, with a graph analysis system 150, and a graph database 160, as well as other, like, systems, devices, and components, and any combination thereof. The network 108 may be a physical network, a virtual network, as well as a hybrid physical-virtual network, including both physical and virtualized components. The network 108 may be, as examples, and without limitation, a local area network, a wide area network, the Internet, the World-Wide Web (WWW), and the like, as well as any combination thereof.

[0032] The graph analysis system 150 is a system, device, or component, configured to perform the various disclosed embodiments of graph-related functionalities. Specifically, the system 150 may provide functions including, without limitation network analysis, traffic analysis, entity querying, graph generation, and the like, as well as any combination thereof. The graph analysis system 150 may be configured to execute one or more instructions, methods, processes, and the like, including, without limitation, the process described with respect to Fig. 2, other, like, processes, and any combination thereof.

[0033] The graph analysis system 150 may be configured as a physical system, device, or component, as a virtual system, device, or component, or in a hybrid physical-virtual configuration. A detailed description of a graph analysis system, 150, according to an embodiment, is provided with respect to Fig. 6, below. It may be understood that, while the graph analysis system 150 is depicted in Fig. 1A as a discrete element external to the cloud environment 103, the graph analysis system 150 may be included within any of the various elements of the network system 102, including the cloud environment 103, the various cloud platforms 104, and subparts thereof, and the network 108, without loss of generality or departure from the scope of the disclosure.

[0034] The graph database (graph DB) 160 is a storage or memory component, device, system, or the like, configured to provide one or more functionalities relevant to storage of graph-related data. The graph DB 160 may be configured to store graph-related data features of one or more types or formats, including, without limitation, raw data, graphs, graph edges, graph vertices, graph schemas, and the like, as well as any combination thereof, including those types or formats described hereinbelow.

[0035] Graphs, as may be included in the graph DB 160, are data features including one or more graph vertices, where such graph vertices may be variously interconnected by one or more graph edges. Graphs may be configured to provide for one or more representations of various data sets, including, without limitation, presentation of network data according to one or more graph schemas, as described hereinbelow. As an example, a graph relevant to the description of a collection of interconnected network entities may include one or more graph vertices, where each graph vertex corresponds with a network entity, and graph edges between such vertices, the edges corresponding with connections between the various network entities. Graphs, and elements thereof, may be generated based on one or more data sets, including during the execution of a graph generation process, such as is described with respect to Fig. 2, below.

[0036] The graph DB 160 may be configured to store one or more graphs, graph, related data features, and the like, as well as any combination thereof. Graphs, as may be stored in the graph DB 160, may be configured to include one or more functional attributes, including, without limitation, directionality, labeling, and the like, where such functional attributes may provide for the execution or enhancement of one or more processes or methods which would be inapplicable to a graph not including such functional attributes. A graph including directionality may be configured to include connection between graph nodes or vertices, via graph edges, as described herein, where the edges connecting such vertices may be uni-directional or bi-directional, providing for enhanced analysis of network entity structures and relationships. Further, a graph configured to include labeling functionality may be configured to provide for the labeling of graph vertices, graph edges, or both, with one or more labels describing the various properties of the labeled vertices or edges. As an example, a graph vertex representing a virtual machine (VM) may be configured to include a “name” label, describing a name property of the VM. Further, the

VM may be configured to run a container entity, where the container entity, as represented in the graph, may be respectively labeled. In addition, according to the same example, the connection, or edge, between the vertices representing the VM and the container entity may be uni-directional and may be labeled as a "run" edge, providing for analysis of the relationship between the vertices, the direction of the relationship, and the type of the relationship.

[0037] The graph DB 160 may be configured as a physical system, device, or component, as a virtual system, device, or component, or in a hybrid physical-virtual configuration. It may be understood that, while the graph DB 160 is depicted in Fig. 1A as a discrete element external to the cloud environment 103, the graph DB 160 may be included within any of the various elements of the network system 102, including the cloud environment 103, the various cloud platforms 104, and subparts thereof, and the network 108, without loss of generality or departure from the scope of the disclosure. Further, it may be understood that the graph DB 160 may be directly connected to, or realized as a component of, the graph analysis system 150, without loss of generality or departure from the scope of the disclosure.

[0038] Fig. 1B is an example diagram depicting a network system 100 and various associated network and external entities utilized to describe the various embodiments. The depicted network system 100 includes a cloud platform 110, where the cloud platform 110 may be a cloud platform similar or identical to a cloud platform, 104, of Fig. 1A, above. The cloud platform 110 includes various subnets, 130-1 through 130-n (hereinafter, "subnets" 130 or "subnet" 130), and various network entities, 105-1 through 105-m (hereinafter, "network entities" 105 or "network entity" 105). As is applicable to the subnets 130, "n" is an integer having a value greater than or equal to two. Further, as is applicable to the network entities 105, "m" is an integer having a value greater than or equal to five. In addition, while the network system 100 of Fig. 1B includes certain elements and combinations of elements, as well as connections therebetween, it may be understood that the depiction is provided for illustrative purposes, and that other, like, elements, combinations of elements, and connections therebetween, may be implemented without loss of generality or departure from the scope of the disclosure. Other, like, network systems 100 may further include multiple cloud platforms 110, including variously-interconnected cloud

platforms 110, and other, like, variations and configurations, without loss of generality or departure from the scope of the disclosure.

[0039] The cloud platform 110 may be configured to include an orchestrator 115. The orchestrator 115 is configured to provide for management of the cloud platform 110. The orchestrator 115 may be configured to provide one or more functionalities including, without limitation, monitoring of elements or components of the cloud platform 110, logging and reporting data relating to the cloud platform 110, managing cloud platform 110 updates and maintenance, generating cloud platform 110 alerts, as well as other, like, functionalities, and any combination thereof. The orchestrator 115 may be configured to report one or more data features related to the cloud platform 110, such as may be requested or collected during the execution of graph generation processes, such as those described hereinbelow.

[0040] The network entities 105 are network entities similar or identical to those network entities, 105, of Fig. 1A, above. As described with respect to Fig. 1A, the network entities 105 are virtual entities or instances of systems, devices, or components, including virtual systems, devices, or components, or any combination thereof. Examples of network entities 105 include, without limitation, virtual networks, firewalls, network interface cards, proxies, gateways, containers, container management entities, virtual machines, subnets 130, hubs, virtual private networks (VPNs), peering connections, load balancers, route tables, and the like, as well as any combination thereof.

[0041] External objects, as may be adjacent or relevant to a cloud platform 110, are entities similar or identical to the network entities 105. The external entities may be configured to communicate with one or more network entities 105, with other, various, external entities, and the like, as well as any combination thereof.

[0042] Fig. 2 is an example flowchart 200 depicting a method for generating unified graph models for network entities, according to an embodiment.

[0043] At S210, network entity data is collected. Network entity data, as may be collected at S210, is data describing one or more entities included in a network, cloud, environment, or other, like, deployment. Network entity data may include data describing the various network entities including, as examples and without limitation, properties, names, network addresses, permissions, properties, configurations, other, like, network entity data

features, and any combination thereof. Network entity data may be collected from one or more network entities, such as those described in detail above.

[0044] Network entity data may be collected at S210 via one or more processes including, without limitation, application of various network entity scanning applications or processes, application of network entity application programming interface (API) commands, calls, and the like, collection from one or more network, cloud, or environment orchestrators, including orchestrators similar or identical to those described hereinabove, other, like, processes, and any combination thereof.

[0045] At S220, network entities are genericized based on the collected network entity data. Generic network entities, which may be created at S220, are network entities which are configured to include one or more standard properties. Such standard properties may be applicable to all genericized network entities of the same type. As an example, a genericized network entity may be a generic proxy object, and, according to the same example, separate, differently configured specific proxy objects, such as an Azure®-native proxy object and an AWS®-native proxy object, may be genericized at S220 for representation as generic proxy objects.

[0046] In an embodiment, S220 may include the generation of new generic network entities, and the conversion of existing specific network entities into generic network entities. Generic network entities may include one or more properties relevant to the type, class, or other, like, category of network entity. Relevant properties may include properties common to specific network entities configured to achieve the same or similar functionalities. Common properties may include one or more properties relevant to the execution or provision of such functionalities.

[0047] Generic entity properties may be defined according to one or more property configurations, including, without limitation, pre-defined properties, user-defined properties, properties defined based on sampled specific entities, other, like, bases, and any combination thereof. Further, generic entity properties may be based on analysis of runtime data features such as, without limitation, lists of entities to which a given entity connects during routine operation, as may be determined by processes including, without limitation, analysis of entity codebases or resources, analysis of runtime logs or reports, and the like, as well as any combination thereof. According to the example described

hereinabove, a generic proxy object may be configured to include properties relevant to the execution of proxy functionalities, and common to various specific property objects included in separate deployments, such as, as examples and without limitation, proxy rules, port configurations, and the like, as well as any combination thereof.

[0048] Genericization at S220 includes, in an embodiment, converting specific objects into generic objects, or generating new generic objects based on specific objects, or a combination thereof. In a further embodiment, S220 may include identifying types, classes, or other, like categories of specific entities, using, for example, comparison of specific entity properties, configurations, and the like, with one or more dictionaries, repositories, or other, like, sources of entity type information. Further, the new generic entities may be entities matching the type, category, or the like, of the identified specific entity or entities, where the new generic entities may include one or more properties of the corresponding specific entities. The genericization of network entities, as at S220, is further described with respect to Fig. 4, below.

[0049] As an example, an AWS®-native proxy objects, network load balancers, application load balancers, application programming interface (API) gateways, and the like, may be, at S220, genericized as generic proxy objects. According to the same example, the AWS®-native specific proxy object may be identified as a proxy-type entity based on the inclusion of data features matching proxy rules within the object's codebase, resource files, and the like. Further, the genericized proxy object, created at S220, may include one or more properties of the AWS®-native proxy object, such as the AWS®-native object's specific proxy rules.

[0050] Further, examples of relevant types of generic entities include, without limitation, entities configured to apply routing rules, network interfaces, entities configured to apply security rules, subnets and virtual networks, gateways, and the like, as well as any combination thereof. According to the same example, generic entities representing entities configured to apply routing rules may be generated, or converted from corresponding specific entities, or both, at S220, providing for the genericization of separate, similar entities configured to apply such rules, where the separate entities may include different routing rules or tables, providing for the genericization of such entities

into a unified format and, subsequently, providing for the execution of unified queries or commands across such genericized entities.

[0051] Likewise, according to the same example, generic entities representing network interfaces may be generated, or converted from corresponding specific entities, or both, at S220, providing for genericization of separate, similar network interfaces, thus providing for encapsulation of the interfaces' network properties. Similarly, according to the same example, generic entities representing entities configured to apply security rules, such as security group rules, network access control lists (ACLs), database ACLs, and the like, may be generated, or converted from corresponding specific entities, or both, at S220, providing for the genericization of such specific entities in a unified format.

[0052] In addition, according to the same example, generic entities representing subnets and virtual networks, which may include routing rules and security rules, and which may be applicable to the description of network hierarchies, may be generated, or converted from corresponding specific entities, or both, at S220, providing for genericization of such entities and, subsequently, execution of one or more unified queries across such entities, including graph traversal commands relevant thereto. Further, according to the same example, generic entities representing gateways, such as internet gateways, relevant to searching the internet connectivity of objects, transit gateways, including complex routing rules and attachments, may be generated, or converted from corresponding specific entities, or both, at S220, providing for genericization of such entities.

[0053] At S230, imputed entities are created. Imputed entities are generic entities similar or identical to those described with respect to S220, above, which may be constructed to provide representation of network entities which are integrated into host platforms, or network entities which are shielded from, or not otherwise exposed to, a system configured to execute network analysis processes and methods, including the method described with respect to Fig. 2, where such a system may be, without limitation, the graph analysis system 150 of Fig. 1A. Imputed entities may be of various types, classes, or categories corresponding to the types, classes, and categories of generic entities, such as the entities genericized at S220, and may include one or more properties corresponding to such types, classes, or categories.

[0054] In an embodiment, imputed entities may be created using identification of platform or environment functionalities which correspond with functionalities of generic entities. Creation of imputed entities using identification of functionalities may include identification of functionalities which are not provided by any network entities, such as the network entities from which data is collected at S210. Following identification of functionalities not provided by any network entities, creation of imputed entities may include creation of a generic imputed entity with types, properties, and the like, matching an entity configured to provide the described functionality, in addition to other, like, means, and any combination thereof. Where imputed entity creation includes identification of platform or environment functionalities corresponding to entities not included in data collection at S210, such identification may include application of one or more processes or methods including, without limitation, identification of functionalities by comparison of platform or environment data flows with data flows relevant to simulated platforms or environments including only the entities included in data collection, identification of functionalities by analysis of platform or environment host or provider feature descriptions, identification by other, like, means, and any combination thereof.

[0055] As an example, where a cloud platform provider includes a load balancing functionality in all platform deployments by inclusion of a load balancer in a platform host, rather than in client deployments, a generic load balancer entity may be created, as an imputed entity, at S230. According to the same example, the inclusion of a provider-based load balancer functionality may be identified by comparing the data flow of a process executed across the deployed platform with a data flow of the same process executed across a simulated platform including only those entities included in data collection, providing for the identification of load balancer functionality based on differences between the analyzed data flows. According to the same example, a generic, imputed load balancer entity may be created at S230 where a load-balancing process or functionality is identified, but where the entity executing the process or functionality is not identified, providing for representation of a load balancer provided by a platform host as a discrete, generic entity.

[0056] It may be understood that the creation of imputed entities at S230 may be executed at any point after the initiation of S220, including simultaneously with S220, without loss of generality or departure from the scope of the disclosure.

[0057] At S240, a network graph is generated. A graph is a multi-dimensional data feature providing a representation of the contents and structure of a network, cloud, environment, or the like. A graph may include one or more graph vertices, interconnected by one or more graph edges. Where, as at S240, a graph is generated to represent a network, cloud, environment, or the like, each graph vertex may correspond with a network entity included in the network, cloud, environment, or the like, and each graph edge may correspond with a connection between such entities. Further, the entities with which the various graph vertices correspond may be generic entities, such as are described with respect to S220, imputed generic entities, such as are described with respect to S230, as well as any combination thereof.

[0058] A graph, as may be generated at S240, may be configured to represent one or more elements of a graph database, such as, as an example, the graph DB 160 of Fig. 1A, above, as well as other, like, graph databases, where such graph databases may be configured to include various tables and other, like, arrangements of network entity information. Where a graph is configured to represent the elements of one or more graph databases, the graph may include various nodes or vertices corresponding with the various entries included in such databases, as well as tables, and the like, included therein. Further, where a graph is configured to represent the elements of one or more graph databases, the graph may include one or more edges, where such edges may represent relationships between the various entries included in such databases. Relationships between graph database entries, as may be represented as graph edges, may be identified by one or more analyses including, without limitation, analysis of graph database entry properties or attributes, analysis of graph database structures or formats, by other, like, analyses, and any combination thereof.

[0059] In an embodiment, such analysis of graph database entry properties or attributes may include execution of one or more resolution processes. According to the same embodiment, a resolution process is a process configured to identify one or more relationships between one or more network entities based on the known properties of such entities. Further, where execution of such a resolution process includes identification of such a relationship, the identified relationship may be, during graph generation at S240, included in a generated graph as a graph edge, linking the various graph vertices which

correspond with the network elements between which the identified relationship exists. As an example, according to the same embodiment, a resolution process may be executed over a network segment including a load balancer configured to assign traffic to either of two connected backend pools, where the backend pools each include a proxy object configured to assign traffic to the various virtual machines (VMs) included in the proxy' objects' respective pools.

[0060] In the same example, the load balancer entity may include one or more load balancer rules, extracted at S240 as load balancer properties, where the load balancer rules may specify the related backend pools, such as by reference to backend pool identifiers or IP addresses. Further, according to the same example, each of the proxy objects may include proxy routing rules, which may be extracted as proxy object properties, specifying the assignment of traffic from the proxy objects to the various VMs of the proxy objects' respective pools. According to the same example, the resolution process may include the identification of relationships between the load balancer and the proxy objects based on the properties of the load balancer and the proxy objects, as well as identification of the relationships between the proxy objects and the objects' respective VMs, based on the properties of the objects and the VMs. Further, in the same example, the resolution process may include, following the identification of such relationships, the generation of graph edges corresponding with the identified relationships.

[0061] Further, a graph, as may be generated at S240, may be configured to provide for execution of one or more queries, commands, instructions, and the like, over the graph, as well as the various data features included therein. The structure of a graph, including several vertices, representing network entities, joined by graph edges, representing entity-to-entity relationships, provides for the execution of various standard, unified queries and commands over the graph, and data thereof. Such queries and commands may be automated, such as by application of one or more algorithms configured to generate and execute such queries and commands, or non-automated, such as by user entry or selection of one or more queries or commands, such as through a graph user interface (UI). Further, such queries and commands may be configured to provide for the extraction of one or more insights based on a graph, and the contents thereof, where insights may be natural-language descriptions of graph features, such as "entity A is

accessible from entity B via port X through entities C and D." Examples of commands or queries applicable to unified graphs, such as may be generated at S240, include, without limitation, UI queries, backend queries, graph algorithms, and the like, as well as any combination thereof.

[0062] Further, in an embodiment, a graph may be configured to provide for the execution of various user-defined commands, queries, instructions, and the like, where such user-defined commands may include, as an example and without limitation, a custom alert configured to generate a notification upon identification of an undesirable feature of a network graph, such as an unsecured internet connection.

[0063] As an example, where a graph database includes separate tables of virtual machines, databases, and proxy entities included in a network, where the graph database is configured to include connections between entries in the same table, as well as entries in different tables, execution of S240 may include the generation of one or more graphs representing the contents of the graph database. The graph generated to represent the graph database, at S240, may include multiple graph vertices, where each graph vertex corresponds to an entry in a table of the graph database, as well as graph edges linking the various vertices, where each graph edge corresponds with a relationship between two entries in the graph database.

[0064] In an embodiment, the various graph vertices, and interconnecting graph edges, may be configured to include one or more descriptive data features. The descriptive data features may be configured to provide representation for one or more properties of the entities or connections corresponding with the various graph vertices and edges, such properties including, without limitation, entity names, addresses, types, configurations, edge direction, and the like, as well as any combination thereof.

[0065] At S250, the generated network graph is stored in a graph database. Storage of a graph object at S250 may include storage of a graph object as a unified representation of network or environment entities, and relationships therebetween, providing for functionalities including, without limitation, execution of unified queries across graphs or graph elements, execution of unified graph management commands or instructions, other, like, functionalities, and any combination thereof.

[0066] In an embodiment, providing a unified representation for network objects, and generation of the network graph, allows for querying of the graph using a simplified and unified set of queries, configuring network entities using a simplified and unified set of comments, and generating insights with respect to the network entities included in the environment.

[0067] In yet another embodiment, the network graph may be utilized to generate and return a graph visualization at S250. A graph visualization is a visual representation of the network graph.

[0068] The graph visualization may be generated by, for example, generation of one or more visual overlays, presentations, or other, like, representations of graph data, such as the visualization described with respect to Fig. 3, below. Such generation of visual representations of graph data may include the generation of visual representations where graph vertices are depicted as points, nodes, or other, like, discrete, visual indications, and where graph edges are depicted as visible interconnections between such points, nodes, and the like, such as lines. Further, generation of such visual representations may include labeling, tagging, or otherwise associating the depicted vertices and edges with one or more visual descriptors, where such visual descriptors may be configured to provide information including, without limitation, element names, types, statuses, edge directionality, and the like, as well as any combination thereof. In an embodiment, such visual descriptors may be configured to display upon selection of a graph element, such as by clicking an element with a computer mouse during presentation of a visualization through a graph visualization presentation platform.

[0069] The graph visualization, as may be generated and returned at S250, may be configured to provide for one or more functionalities including, without limitation, visualization of network, cloud, or environment elements and connections, user interactivity, such as by clicking elements or connections to display relevant information, searching or querying of graph elements or underlying graph data features, and the like, as well as any combination thereof. An example of a graph visualization is described with respect to Fig. 3, below.

[0070] Fig. 3 is an example of a network graph visualization 300, according to an embodiment. The example network graph visualization 300 is generated as a visual

representation of a network, cloud, environment, or the like, where such generation is described with respect to S250, above, and where the visualization is presented through a network graph visualization utility. A network graph visualization utility may be an application, interface, or other, like, means of providing a visual representation of a network graph visualization 300, and the like, where the provided network graph visualization 300 may include various interactive features, as described hereinbelow. A network graph visualization utility may be configured as, as examples and without limitation, a web interface, an application or executable installed on a user or administrator device, other, like, configurations, and any combination thereof.

[0071] The network graph visualization 300 of Fig. 3 is a network graph visualization representing a network, such as the networks described hereinabove, where the various entities, systems, devices, components, and the like, of the network are represented as visualizations of graph vertices 310, and where such nodes are variously interconnected by visualizations of graph edges 320, representing connections between the various entities, systems, devices, components, and the like. It may be understood that while only one graph vertex visualization 310 and one graph edge visualization 320 are labeled for purposes of simplicity, other, like, vertex visualizations 310 and edge visualizations 320 may be so labeled without loss of generality or departure from the scope of the disclosure.

[0072] The network graph visualization 300, and corresponding network graph visualization utility, may be configured to provide for various interactive functionalities. In an embodiment, where a user interacts with a graph vertex visualization 310, such as by clicking the graph vertex visualization 310 with a mouse or tapping the graph vertex visualization 310 through a touchscreen, the graph visualization utility may be configured to display a graph vertex overview pane 315. The graph vertex overview pane 315 may be an information panel, including data relating to the given graph vertex visualization 310 and describing various entity data features, such as those object data features collected at S210 of Fig. 2, above. The graph vertex overview pane 315 may be configured to provide information relating to the various vertex visualizations 310 including, as examples and without limitation, object names, types, statuses, relevant metadata, and the like, as well as any combination thereof.

[0073] In addition, the network graph visualization 300, and corresponding network graph visualization utility, may be configured to provide for the selection of one or more graph visualization 300 views. A graph visualization 300 view is a selective presentation of one or more aspects of a graph visualization 300, including selection of, as examples and without limitation, entities and connections external to a specified network, cloud, environment, or the like, entities and connections included in a first network of a cloud environment, entities and connections relevant to a specified product, service, process, or the like, entities and connections having one or more specified criteria, and the like, as well as any combination thereof. A network graph visualization, and the corresponding network graph utility, may be configured to provide such views by one or more means including, without limitation, generation of displays including only relevant objects and connections, generation of displays including application of identifying highlights, shading, or the like, to such relevant entities and connections, other, like, means, and any combination thereof.

[0074] Further, the network graph visualization 300, and corresponding network graph visualization utility, may be configured to include a search tool 330, providing for location and selection of one or more user-specified graph vertex visualizations 310 or graph edge visualizations 320 within the graph. The search tool 330 may be configured to provide for search functionality based on one or more user specifications including, as examples and without limitation, entity or connection names, types, IDs, statuses, labels or tags associated with various elements of the network graph visualization 300, and the like, as well as any combination thereof. Further, the search tool 330 may be configured to provide for the execution of one or more compound queries, such as queries relating to objects or connections including multiple attributes, each attribute matching an element of the query. The search tool 330 may be further configured to provide for the execution of one or more searches or queries, as described herein, including, without limitation, complex queries, as described, to or on one or more views, such as those views described hereinabove. In addition, the network graph visualization 300, and corresponding network graph visualization utility, may be configured to include a help tool 340, providing for display of one or more resources related to the network graph visualization 300 and network graph visualization utility.

[0075] It should be noted that a network graph visualization 300, shown in Fig. 3, provides a visual representation of graph data, where such data may be provided in other formats including, without limitation, tables, charts, other, non-visual, data organization formats, lists of entities, other, like, formats, and any combination thereof.

[0076] Fig. 4 is an illustration 400 of the genericization of a network entity, utilized to describe the various embodiments. The illustration 400 includes a specific object 410 and a generic object 420, where the generic object corresponds to the specific object 410. The specific object is a network entity including one or more known properties 412-1 through 412-N (hereinafter referred to as "specific object property" 412 or "specific object properties" 412), where each specific object property 412 includes a value 414-1 through 414-N (hereinafter referred to as "specific object property value" 414 or "specific object property values). The generic object 420 is a network entity generated by one or more means, including, without limitation, the genericization processes described with respect to Fig. 2, above. The generic object 420 includes one or more properties 422-1 through 422-N (hereinafter referred to as "generic object property" 422 or "generic object properties" 422), where each generic object property 422 includes a value 424-1 through 424-N (hereinafter referred to as "generic object property value" 424 or "generic object property values" 424). As is applicable to the specific object properties 412, the specific object property values 414, the generic object properties 422, and the generic object property values 424, "N" is an integer having a value greater than one.

[0077] The genericization of an object, as depicted in the illustration 400, is the process of generating a generic object 420 from a specific object 410. The genericization of an object may be achieved using the method described with respect to Fig. 2, other, like, methods, and any combination thereof. The generated generic object 420 is a network entity having a type similar or identical to the type of the specific object 410 and including one or more generic object properties 422 similar or identical to the specific object properties 412. The generic object 420 may be generated according to one or more pre-defined or user-defined formats, schemas, templates, and the like, providing for inclusion of one or more generic object properties 422 for generic objects 420 of a given type. The generic object property values 424 may be values populated, during genericization, based on the corresponding specific object property values 414. Further, generic object property values

424 may be pre-defined or user-defined, such as in a template, schema, or the like, from which the generic object 420 is generated, providing for population of generic object property values 424 with one or more default or pre-configured values.

[0078] As an example, where a specific object 410 is genericized, such as during the execution of the method described with respect to Fig. 2, a generic object 420 may be generated during genericization. The generated generic object 420 may be of the same type as the specific object 410, such as, for example, a firewall entity. Where the generic object 420 is generated based on a template firewall entity, the generic object 420 may include one or more pre-configured generic object properties 422, such as, as examples and without limitation, firewall rules, firewall addresses, firewall port configurations, firewall connection configurations, and the like, as well as any combination thereof. During genericization, the generic object property values 424 may be populated based on the corresponding specific object property values 414, such as specific object 410 firewall rules, specific object 410 firewall addresses, specific object 410 firewall port configurations, specific object 410 firewall connection configurations, and the like. Where, according to the same example, the generic object 420 includes one or more generic object properties 422 corresponding to specific object properties 412 which are not defined in the specific object 410, or for which specific object property values 414 are not defined, genericization may include the population of generic object property values 424 with values pre-defined in the template or format from which the generic object 420 is generated.

[0079] Fig. 5A is an example interactive graph analysis platform 500, provided through a user interface (UI), according to an embodiment. The example platform 500 provides for user interaction with one or more graph analysis tools through a user device configured to execute the UI, where such a user device may be, as examples and without limitation, a personal computer, a tablet computer, a smartphone, other, like, devices, as well as various combinations thereof. The example platform 500 includes a query construction pane 510, including a query construction tool 515, as well as a per-query unique return display 520, the per-query unique return display including several query return columns 522-1 through 522-4 (hereinafter, “query return column” 522 or “query return columns” 522).

[0080] The query construction pane 510 is a feature of a graph analysis platform, providing for display of the query construction tool 515. The query construction pane 510 may be of a fixed size relative to the graph analysis platform, or may, in an embodiment, be dynamically re-sized based on one or more factors including, without limitation, user re-size commands, automatic resizing based on the properties of the query construction tool, such as the number of queries included in a compound query constructed therein, as well as other, like, bases, and any combination thereof.

[0081] The query construction tool 515 is an interactive graph analysis tool, providing for user interaction with data included in a graph, such as graphs generated as described herein, on a visual basis. The query construction tool 515 may be configured to accept one or more inputs, which inputs may be, upon execution of a query by a graph analysis system, or other, similar, component, device, system, or the like, configured to provide various graph analysis functionalities, automatically translated into one or more graph-search queries, instructions, commands, or the like, providing for development of compound queries via the tool's 515 visual interface.

[0082] Graph-search queries, instructions, commands, or the like, are graph-specific functions providing for the identification of one or more entities, or other, similar graph elements, based on the various input parameters specified by a user via the tool 515. Graph-search queries, and the like, as are applicable to the automated retrieval of graph information based on input parameters, are queries, instructions, commands, and the like, generated and structured in one or more formats or languages specific to the structure or format of a graph, such as, as examples and without limitation, JavaScript Object Notation (JSON) queries, other, like, queries, and any combination thereof. Graph-search queries may be configured to accept one or more input parameters, to traverse one or more graphs and identify elements thereof matching the input parameters when executed by a graph analysis system or other, like, system, and to return the one or more identified graph elements. Graph search queries may be generated via one or more means including, without limitation, user-generation by development of specific queries in query formats, conversion of user input selections, such as through the query construction tool 515, into query formats, by other, like, means, and any combination thereof.

[0083] The query construction tool 515 may be configured to provide for user selection of one or more graph query criteria, including query criteria corresponding to designated query search and filter refinements. Query search refinements are top-layer query search criteria, providing for selection of one or more graph entities or elements matching one or more specifications, such specifications including, as an example and without limitation, a type of computing entities. Query filter refinements are lower-layer query search criteria, providing for selection of filtered graph entities or elements, from the group of entities or elements relevant to a given query search refinement, where such filtered graph entities or elements may be filtered on the basis of one or more factors or attributes including, without limitation, entity or element names, types, addresses, connection types, entity or element locations or groups, other, like, factors or attributes, and any combination thereof. The query construction tool 515 may be configured to provide for user generation of compound queries, wherein compound queries are queries including a search refinement and one or more filter refinements, providing for identification and selection of graph entities or elements including one or more properties or attributes, wherein such properties or attributes are those specified in the compound query.

[0084] The per-query unique return display 520 is an information pane configured to provide visual displays of graph information relevant to the query or queries generated via the query construction tool 515. The per-query unique return display is configured to automatically generate, upon return of graph information relevant to an executed graph query, one or more query return columns 522-1 through 522-4. The query return columns 522 are columns including information entries, wherein the information entries included in each column correspond with the various properties or attributes of one or more graph entities or elements returned in response to the execution of a graph query. Examples of query return columns, described by the columns' respective headers, include, without limitation, graph entity or element names, relevant cloud platforms, internet accessibility statuses, and the like, as well as any combination thereof.

[0085] Although only four query return columns 522-1 through 522-4 are shown in the example platform 500 for purposes of simplicity, it may be understood that one or more of such columns may be likewise relevant to an executed query without loss of generality or departure from the scope of the disclosure.

[0086] As an example, according to the platform 500 described with respect to Fig. 5A, a graph search query may be generated based on a user's selection of query inputs providing for a search for databases or virtual machines (VMs) which contain network interfaces, which are inside subnets, which are inside virtual networks with one or more user-specified names, which are connected to one or more peering connections, and which are peered to a virtual network with a specified name. Based on the identification of graph elements or entities including the attributes specified in the compound query developed through the query construction tool 515, the platform 500 may be configured to return a set of virtual machines and databases matching the described query, and to, through the per-query unique return display 520, display various attributes of each database or virtual machine identified.

[0087] Fig. 5B is an example interactive graph analysis platform 550, provided through a user interface (UI), according to an embodiment. The example platform 550 provides for user interaction with one or more graph analysis tools through a user device configured to execute the UI, where such a user device may be, as examples and without limitation, a personal computer, a tablet computer, a smartphone, other, like, devices, as well as various combinations thereof. The example platform 550 includes a query construction pane 510, including a query construction tool 515, as well as a per-query unique return display 530, the per-query unique return display including several query return columns 532-1 through 532-5 (hereinafter, "query return column" 532 or "query return columns" 532).

[0088] The query construction pane 510 is a feature of a graph analysis platform, providing for display of the query construction tool 515. The query construction pane 510 may be of a fixed size relative to the graph analysis platform, or may, in an embodiment, be dynamically re-sized based on one or more factors including, without limitation, user re-size commands, automatic resizing based on the properties of the query construction tool, such as the number of queries included in a compound query constructed therein, as well as other, like, bases, and any combination thereof.

[0089] The query construction tool 515 is an interactive graph analysis tool, providing for user interaction with data included in a graph, such as graphs generated as described herein, on a visual basis. The query construction tool 515 may be configured to accept one or

more inputs, which inputs may be, upon execution of a query by a graph analysis system, or other, similar, component, device, system, or the like, configured to provide various graph analysis functionalities, automatically translated into one or more graph-search queries, instructions, commands, or the like, providing for development of compound queries via the tool's 515 visual interface.

[0090] Graph-search queries, instructions, commands, or the like, are graph-specific functions providing for the identification of one or more entities, or other, similar graph elements, based on the various input parameters specified by a user via the tool 515. Graph-search queries, and the like, as are applicable to the automated retrieval of graph information based on input parameters, are queries, instructions, commands, and the like, generated and structured in one or more formats or languages specific to the structure or format of a graph, such as, as examples and without limitation, JavaScript Object Notation (JSON) queries, other, like, queries, and any combination thereof. Graph-search queries may be configured to accept one or more input parameters, to traverse one or more graphs and identify elements thereof matching the input parameters when executed by a graph analysis system or other, like, system, and to return the one or more identified graph elements. Graph search queries may be generated via one or more means including, without limitation, user-generation by development of specific queries in query formats, conversion of user input selections, such as through the query construction tool 515, into query formats, by other, like, means, and any combination thereof.

[0091] The query construction tool 515 may be configured to provide for user selection of one or more graph query criteria, including query criteria corresponding to designated query search and filter refinements. Query search refinements are top-layer query search criteria, providing for selection of one or more graph entities or elements matching one or more specifications, such specifications including, as an example and without limitation, a type of computing entity. Query filter refinements are lower-layer query search criteria, providing for selection of filtered graph entities or elements, from the group of entities or elements relevant to a given query search refinement, where such filtered graph entities or elements may be filtered on the basis of one or more factors or attributes including, without limitation, entity or element names, types, addresses, connection types, entity or element locations or groups, other, like, factors or attributes, and any combination thereof.

The query construction tool 515 may be configured to provide for user generation of compound queries, wherein compound queries are queries including a search refinement and one or more filter refinements, providing for identification and selection of graph entities or elements including one or more properties or attributes, wherein such properties or attributes are those specified in the compound query.

[0092] The per-query unique return display 530 is an information pane configured to provide visual displays of graph information relevant to the query or queries generated via the query construction tool 515. The per-query unique return display is configured to automatically generate, upon return of graph information relevant to an executed graph query, one or more query return columns 532-1 through 532-5. The query return columns 532 are columns including information entries, wherein the information entries included in each column correspond with the various properties or attributes of one or more graph entities or elements returned in response to the execution of a graph query. Examples of query return columns, described by the columns' respective headers, include, without limitation, graph entity or element names, relevant network interfaces, relevant subnets, relevant virtual networks, relevant gateways, and the like, as well as any combination thereof.

[0093] Although only five query return columns 532-1 through 532-5 are shown in the example platform 550 for purposes of simplicity, it may be understood that one or more of such columns may be likewise relevant to an executed query without loss of generality or departure from the scope of the disclosure.

[0094] As an example, according to the platform 550 described with respect to Fig. 5B, a graph search query may be generated based on a user's selection of query inputs providing for a search for virtual machines (VMs) which contain network interfaces, which are inside subnets, which are inside virtual networks, which contain internet gateways, where the virtual network network address is public, and where the virtual network includes a network security rule which specifies connection allowance for a given source address. Based on the identification of graph elements or entities including the attributes specified in the compound query developed through the query construction tool 515, the platform 530 may be configured to return a set of virtual machines matching the described

query, and to, through the per-query unique return display 530, display various attributes of each virtual machine identified.

[0095] Fig. 6 is an example hardware block diagram 600 depicting a graph analysis system 150, according to an embodiment. The graph analysis system 150 includes a processing circuitry 610 coupled to a memory 620, a storage 630, and a network interface 640. In an embodiment, the components of the graph analysis system 150 may be communicatively connected via a bus 650.

[0096] The processing circuitry 610 may be realized as one or more hardware logic components and circuits. For example, and without limitation, illustrative types of hardware logic components that can be used include field programmable gate arrays (FPGAs), application-specific integrated circuits (ASICs), Application-specific standard products (ASSPs), system-on-a-chip systems (SOCs), graphics processing units (GPUs), tensor processing units (TPUs), general-purpose microprocessors, microcontrollers, digital signal processors (DSPs), and the like, or any other hardware logic components that can perform calculations or other manipulations of information.

[0097] The memory 620 may be volatile (e.g., random access memory, etc.), non-volatile (e.g., read only memory, flash memory, etc.), or a combination thereof.

[0098] In one configuration, software for implementing one or more embodiments disclosed herein may be stored in the storage 630. In another configuration, the memory 620 is configured to store such software. Software shall be construed broadly to mean any type of instructions, whether referred to as software, firmware, middleware, microcode, hardware description language, or otherwise. Instructions may include code (e.g., in source code format, binary code format, executable code format, or any other suitable format of code). The instructions, when executed by the processing circuitry 510, cause the processing circuitry 610 to perform the various processes described herein.

[0099] The storage 630 may be magnetic storage, optical storage, and the like, and may be realized, for example, as flash memory or another memory technology, compact disk-read only memory (CD-ROM), Digital Versatile Disks (DVDs), or any other medium which can be used to store the desired information.

[0100] The network interface 640 allows the graph analysis system 150 to communicate with the various components, devices, and systems described herein for generation of unified graph models for network entities, as well as other, like, purposes.

[0101] It should be understood that the embodiments described herein are not limited to the specific architecture illustrated in Fig. 6, and other architectures may be equally used without departing from the scope of the disclosed embodiments.

[0102] It should be noted that the computer-readable instructions may be construed broadly to mean any type of instructions, whether referred to as software, firmware, middleware, microcode, hardware description language, or otherwise. Instructions may include code, such as in source code format, binary code format, executable code format, or any other suitable format of code. The instructions, when executed by the circuitry, cause the circuitry to perform the various processes described herein.

[0103] The various embodiments disclosed herein can be implemented as hardware, firmware, software, or any combination thereof. Moreover, the software is preferably implemented as an application program tangibly embodied on a program storage unit or computer readable medium consisting of parts, or of certain devices and/or a combination of devices. The application program may be uploaded to, and executed by, a machine comprising any suitable architecture. Preferably, the machine is implemented on a computer platform having hardware such as one or more central processing units (CPUs), a memory, and input/output interfaces. The computer platform may also include an operating system and microinstruction code. The various processes and functions described herein may be either part of the microinstruction code or part of the application program, or any combination thereof, which may be executed by a CPU, whether or not such a computer or processor is explicitly shown. In addition, various other peripheral units may be connected to the computer platform, such as an additional data storage unit and a printing unit. Furthermore, a non-transitory computer readable medium is any computer readable medium except for a transitory propagating signal.

[0104] As used herein, the phrase “at least one of” followed by a listing of items means that any of the listed items can be utilized individually, or any combination of two or more of the listed items can be utilized. For example, if a system is described as including “at least one of A, B, and C,” the system can include A alone; B alone; C alone; A and B in

combination; B and C in combination; A and C in combination; or A, B, and C in combination.

[0105] All examples and conditional language recited herein are intended for pedagogical purposes to aid the reader in understanding the principles of the disclosed embodiment and the concepts contributed by the inventor to furthering the art, and are to be construed as being without limitation to such specifically recited examples and conditions. Moreover, all statements herein reciting principles, aspects, and embodiments of the disclosed embodiments, as well as specific examples thereof, are intended to encompass both structural and functional equivalents thereof. Additionally, it is intended that such equivalents include both currently known equivalents as well as equivalents developed in the future, i.e., any elements developed that perform the same function, regardless of structure.

IPR2025-01084
Orca Security EX1002 Page 454

CLAIMS

What is claimed is:

1. A method for generation of unified graph models for network entities, comprising:

collecting, for at least one network entity of a plurality of network entities, at least one network entity data feature, wherein the at least one network entity data feature is a network entity property;

genericizing the collected at least one network entity;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and

storing the generated at least a network graph.

2. The method of claim 1, wherein the at least one network entity data feature is a network entity property relating to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration.

3. The method of claim 1, wherein genericizing the at least one network entity further comprises:

generating a new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity.

4. The method of claim 1, wherein genericizing the at least one network entity comprises:

converting the at least one network entity into a new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity.

5. The method of claim 1, further comprising:

creating at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities.

6. The method of claim 5, wherein creating at least one imputed entity comprises:

identifying at least a platform or environment functionality which corresponds with a functionality of a generic network entity.

7. The method of claim 1, wherein the generated network graph is a unified representation of the plurality of network entities.

8. The method of claim 1, wherein the generated network graph is a unified representation of the plurality of environment layers.

9. The method of claim 1, wherein the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

10. The method of claim 9, wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

11. The method of claim 9, wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity.

12. The method of claim 11, wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at

least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge.

13. The method of claim 1, wherein storing the generated at least one network graph comprises:

returning at least a visualization of the generated at least one network graph.

14. The method of claim 1, wherein storing the generated at least one network graph further comprises:

storing the generated network graph in a graph database.

15. The method of claim 1, wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection.

16. A non-transitory computer readable medium having stored thereon instructions for causing a processing circuitry to execute a process for generation of unified graph models for network entities, the process comprising:

collecting, for at least one network entity of a plurality of network entities, at least one network entity data feature, wherein the at least one network entity data feature is a network entity property;

genericizing the collected at least one network entity;

generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and

storing the generated at least a network graph.

17. A system for generation of unified graph models for network entities, comprising:

a processing circuitry; and

a memory, the memory containing instructions that, when executed by the processing circuitry, configure the system to:

collect, for at least one network entity of a plurality of network entities, at least one network entity data feature, wherein the at least one network entity data feature is a network entity property;

genericize the collected at least one network entity;

generate at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and

store the generated at least a network graph.

18. The system of claim 17, wherein the at least one network entity data feature is a network entity property relating to at least one of: a network entity type, a network entity class, a network entity category, and a network entity configuration.

19. The system of claim 17, wherein the system is further configured to:

generate a new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity.

20. The system of claim 17, wherein the system is further configured to:

convert the at least one network entity into a new generic network entity, wherein the new generic network entity includes at least a network entity property of the at least one network entity.

21. The system of claim 17, wherein the system is further configured to:

create at least one imputed entity, wherein the at least one imputed entity is a generic network entity representing an executed platform functionality, where the executed platform functionality is not executed by a network entity of the plurality of network entities.

22. The system of claim 21, wherein the system is further configured to:

identify at least a platform or environment functionality which corresponds with a functionality of a generic network entity.

23. The system of claim 17, wherein the generated network graph is a unified representation of the plurality of network entities.

24. The system of claim 17, wherein the generated network graph is a unified representation of the plurality of environment layers.

25. The system of claim 17, wherein the generated at least a network graph includes at least one graph vertex, wherein the at least one graph vertex represents at least one of: a network entity, a generic entity, and an imputed entity.

26. The system of claim 25, wherein the at least one graph vertex includes at least a property label, wherein the at least a property label includes at least a description of a property of the at least one graph vertex.

27. The system of claim 25, wherein the generated at least a network graph includes at least one graph edge, wherein the at least one graph edge is a connection between two graph vertices, and wherein the at least one graph edge represents a relationship between two connected entities, wherein a connected entity is at least one of: a network entity, a generic entity, and an imputed entity.

28. The system of claim 27, wherein the at least one graph edge includes at least one of: a property label, and a directionality indicator, wherein a property label includes at least a description of a property of the at least one graph edge, and wherein a directionality indicator includes at least a description of a direction of the at least one graph edge.

29. The system of claim 17, wherein the system is further configured to:
return at least a visualization of the generated at least one network graph.

30. The system of claim 17, wherein the system is further configured to:
store the generated network graph in a graph database.

31. The system of claim 17, wherein a network entity of the plurality of network entities includes any one of: a private endpoint, a transit gateway, a tag-based ruleset, an entity configured to implement a tag-based ruleset, a container-management service, a container-management application, a third-party container, a third-party image, a web-access firewall, a firewall implementation, a multi-entity connection, a cross-entity connection, a container manager, and a container manager connection.

ABSTRACT

A system and method for generation of unified graph models for network entities are provided. The method includes collecting, for at least one network entity of a plurality of network entities, at least one network entity data feature, wherein the at least one network entity data feature is a network entity property; genericizing the collected at least one network entity; generating at least a network graph, wherein the generated network graph is a multi-dimensional data structure providing a representation of the plurality of network entities and relations between the network entities of the plurality of network entities; and storing the generated at least a network graph.

IPR2025-01084
Orca Security EX1002 Page 461

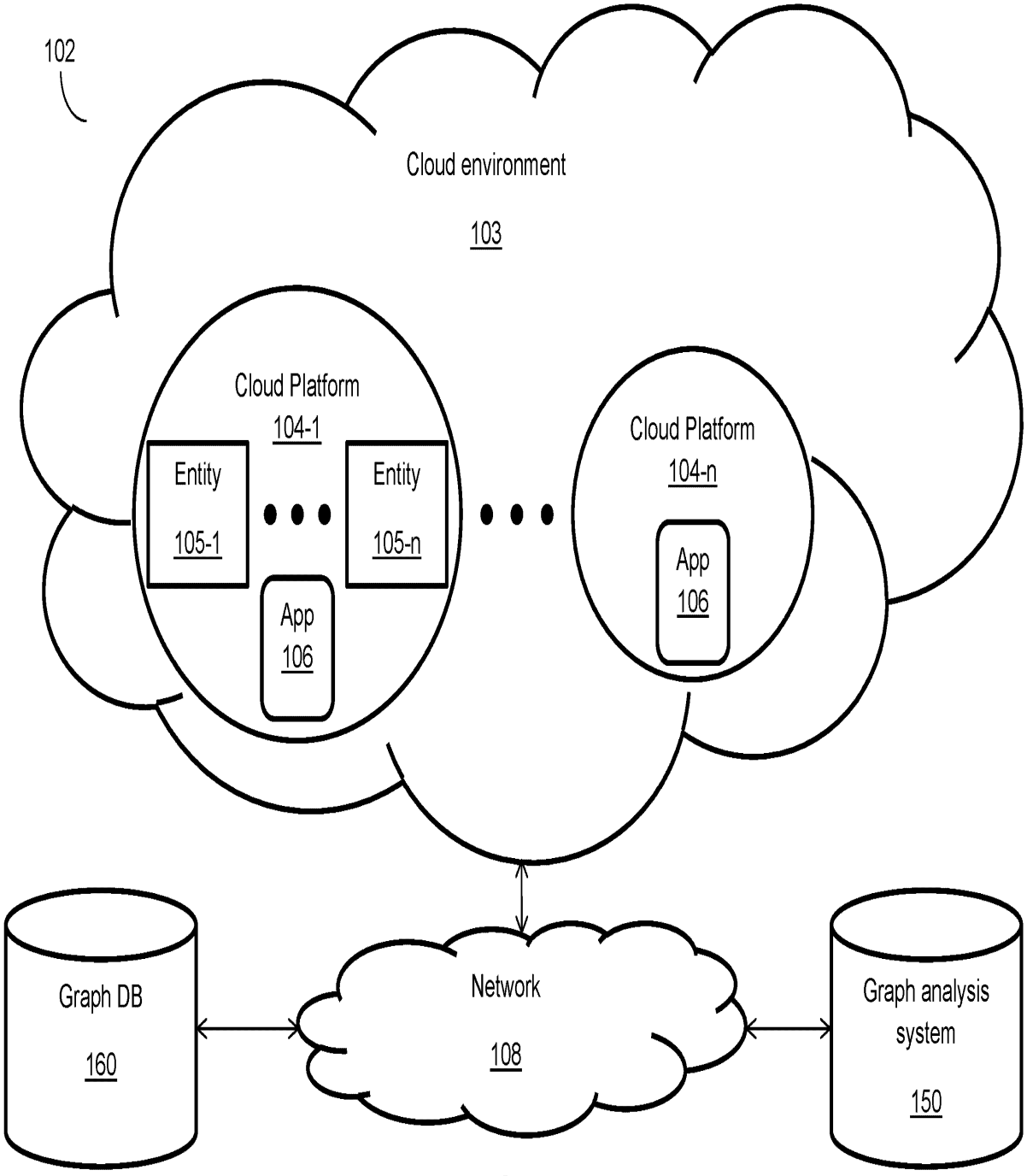

102
Cloud environment
103
Cloud Platform
104-1
Entity
105-1
Entity
105-n
App
106
Cloud Platform
104-n
App
106
Graph DB
160
Network
108
Graph analysis system
150

FIG. 1A

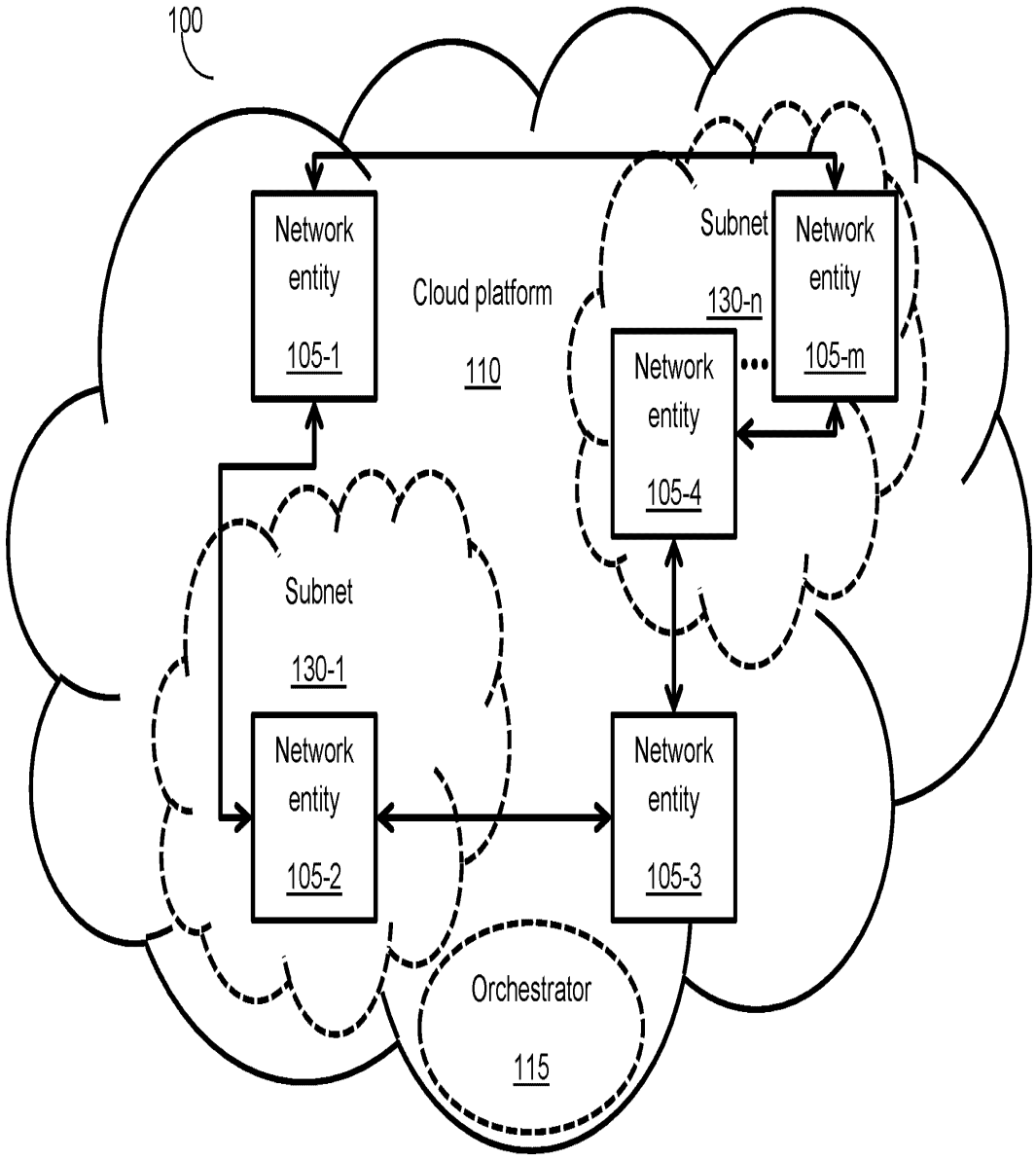

100
Network entity 105-1
Cloud platform 110
Subnet 130-n
Network entity 105-m
Network entity 105-4
Subnet 130-1
Network entity 105-2
Network entity 105-3
Orchestrator 115

FIG. 1B

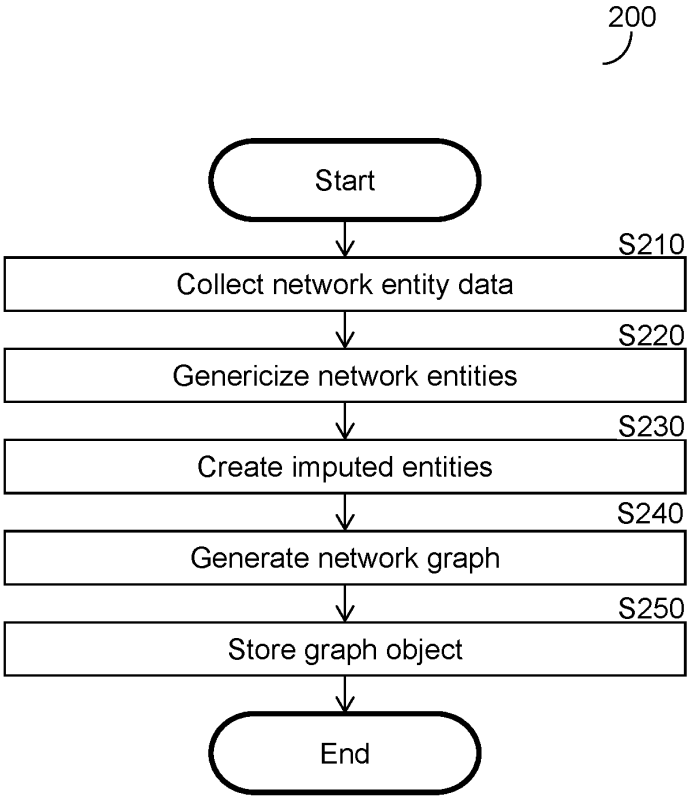

200
Start
S210
Collect network entity data
S220
Genericize network entities
S230
Create imputed entities
S240
Generate network graph
S250
Store graph object
End

FIG. 2

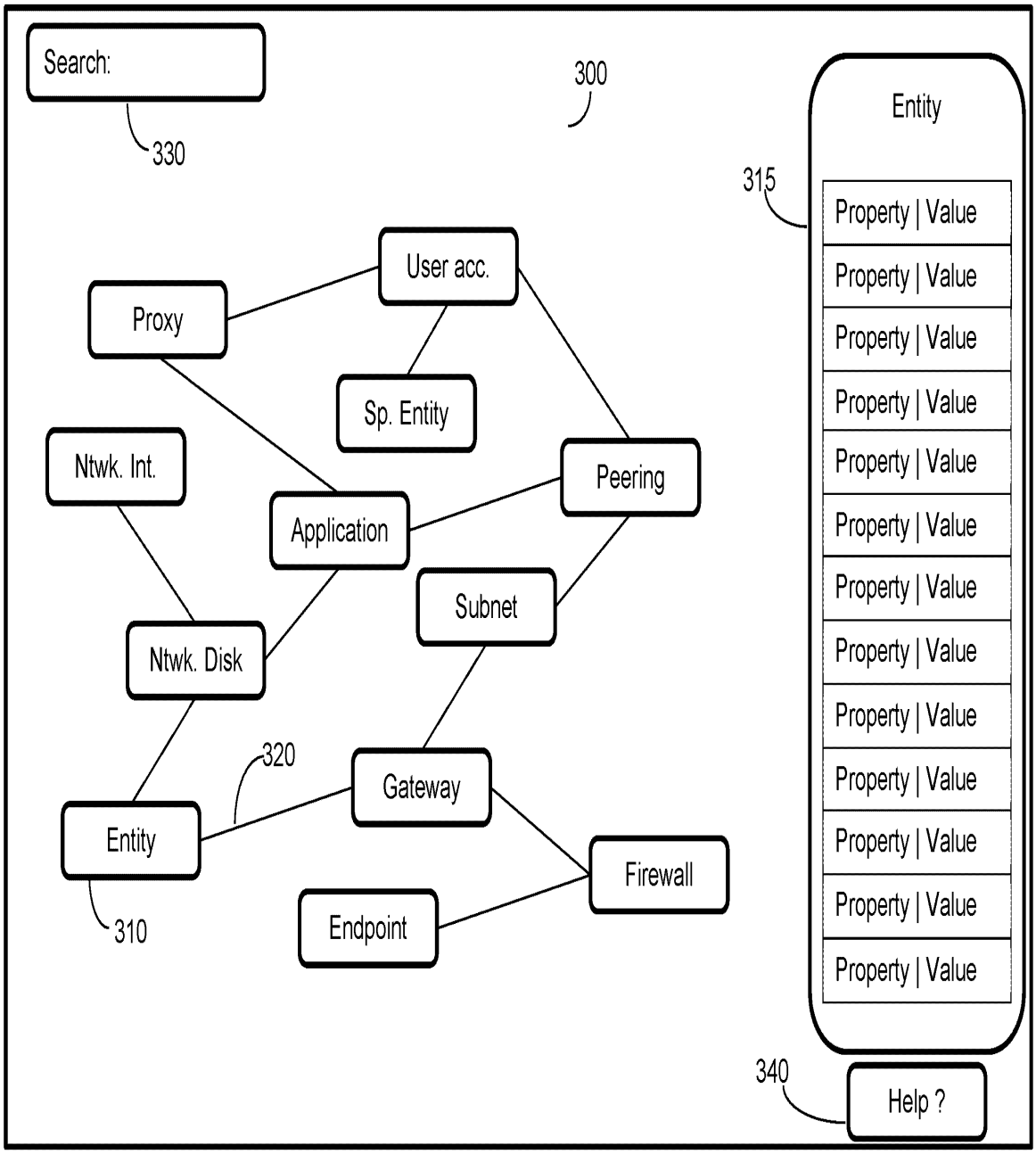

Search:
330
300
Entity
315
Property | Value
Property | Value
Property | Value
Property | Value
Property | Value
Property | Value
Property | Value
Property | Value
Property | Value
Property | Value
Property | Value
Property | Value
Property | Value
User acc.
Proxy
Sp. Entity
Ntwk. Int.
Peering
Application
Subnet
Ntwk. Disk
320
Gateway
Entity
Firewall
310
Endpoint
340
Help ?

FIG. 3

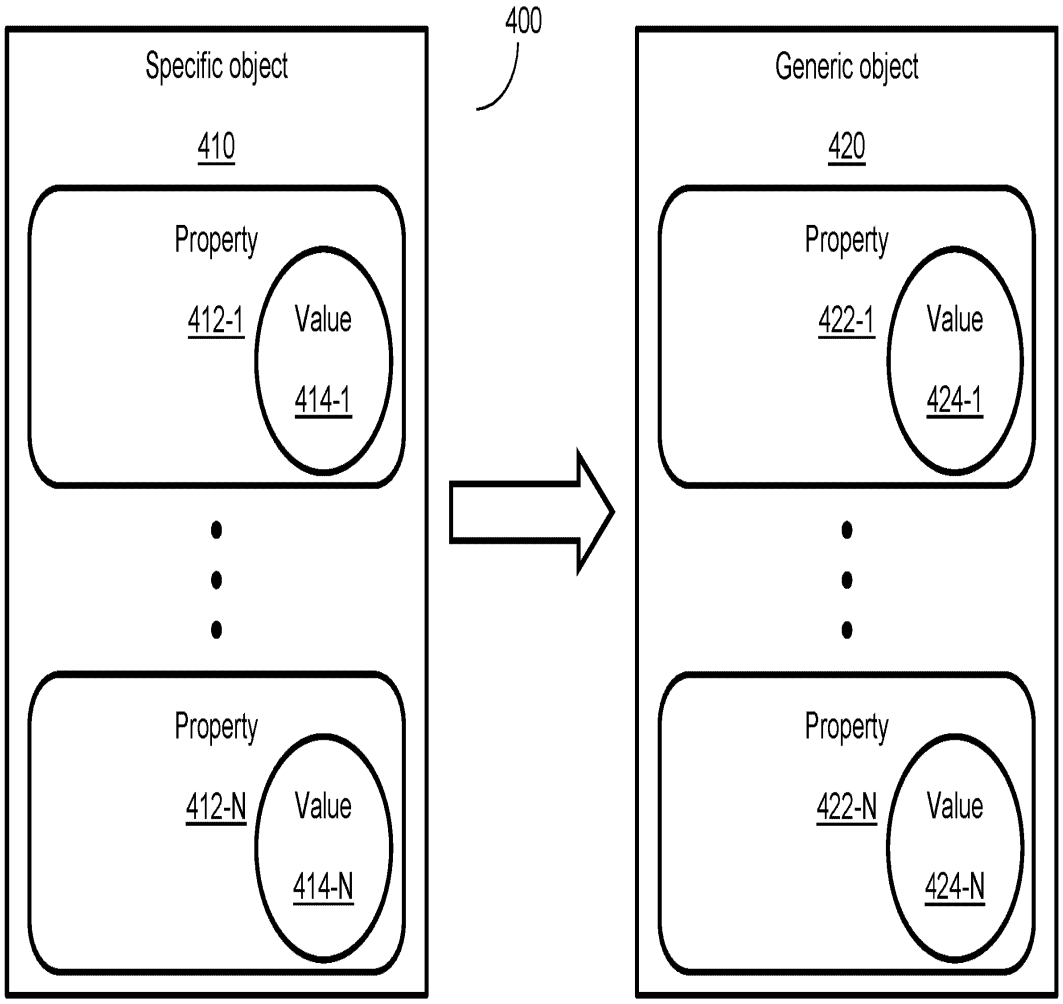

400
Specific object
410
Property
412-1
Value
414-1
Property
412-N
Value
414-N
Generic object
420
Property
422-1
Value
424-1
Property
422-N
Value
424-N

FIG. 4

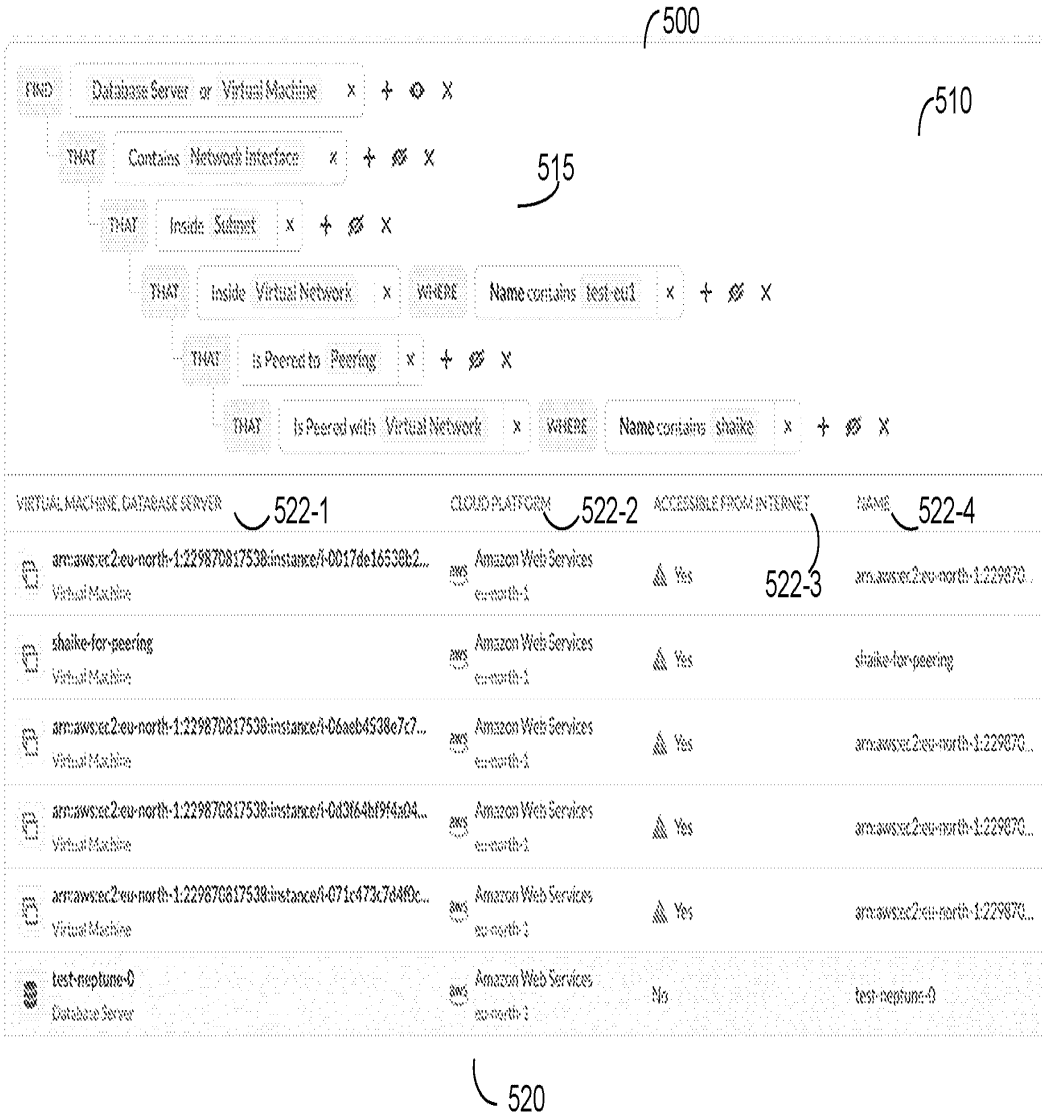

500
510
515
FIND Database Server or Virtual Machine
THAT Contains Network Interface
THAT Inside Subnet
THAT Inside Virtual Network
WHERE Name contains test-eu1
THAT Is Peered to Peering
THAT Is Peered with Virtual Network
WHERE Name contains shaike
VIRTUAL MACHINE, DATABASE SERVER
522-1
CLOUD PLATFORM
522-2
ACCESSIBLE FROM INTERNET
522-3
NAME
522-4
arn:aws:ec2:eu-north-1:229870817538:instance/i-0017de16538b2...
Virtual Machine
Amazon Web Services
eu-north-1
Yes
arn:aws:ec2:eu-north-1:229870...
shaike-for-peering
Virtual Machine
Amazon Web Services
eu-north-1
Yes
shaike-for-peering
arn:aws:ec2:eu-north-1:229870817538:instance/i-06aeb4538e7c7...
Virtual Machine
Amazon Web Services
eu-north-1
Yes
arn:aws:ec2:eu-north-1:229870...
arn:aws:ec2:eu-north-1:229870817538:instance/i-0d3f64bf9f4a04...
Virtual Machine
Amazon Web Services
eu-north-1
Yes
arn:aws:ec2:eu-north-1:229870...
arn:aws:ec2:eu-north-1:229870817538:instance/i-071c473c7d4f0c...
Virtual Machine
Amazon Web Services
eu-north-1
Yes
arn:aws:ec2:eu-north-1:229870...
test-neptune-0
Database Server
Amazon Web Services
eu-north-1
No
test-neptune-0
520

FIG. 5A

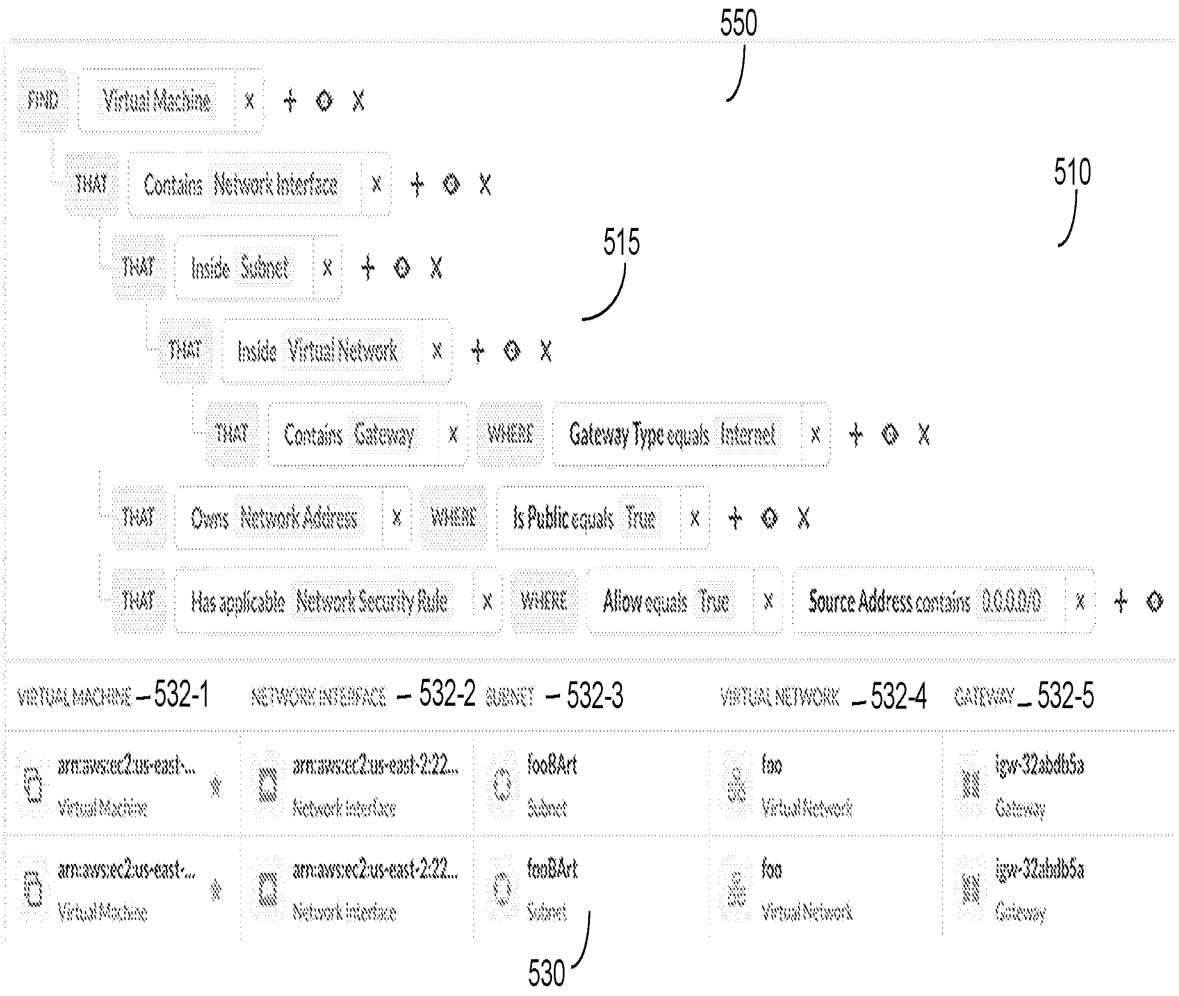

550
FIND
Virtual Machine
THAT
Contains Network Interface
510
THAT
Inside Subnet
515
THAT
Inside Virtual Network
THAT
Contains Gateway
WHERE
Gateway Type equals Internet
THAT
Owns Network Address
WHERE
Is Public equals True
THAT
Has applicable Network Security Rule
WHERE
Allow equals True
Source Address contains 0.0.0.0/0
VIRTUAL MACHINE – 532-1
NETWORK INTERFACE – 532-2
SUBNET – 532-3
VIRTUAL NETWORK – 532-4
GATEWAY – 532-5
arn:aws:ec2:us-east-...
Virtual Machine
arn:aws:ec2:us-east-2:22...
Network Interface
foo8Art
Subnet
foo
Virtual Network
igw-32abdb5a
Gateway
arn:aws:ec2:us-east-...
Virtual Machine
arn:aws:ec2:us-east-2:22...
Network Interface
foo8Art
Subnet
foo
Virtual Network
igw-32abdb5a
Gateway
530

FIG. 5B

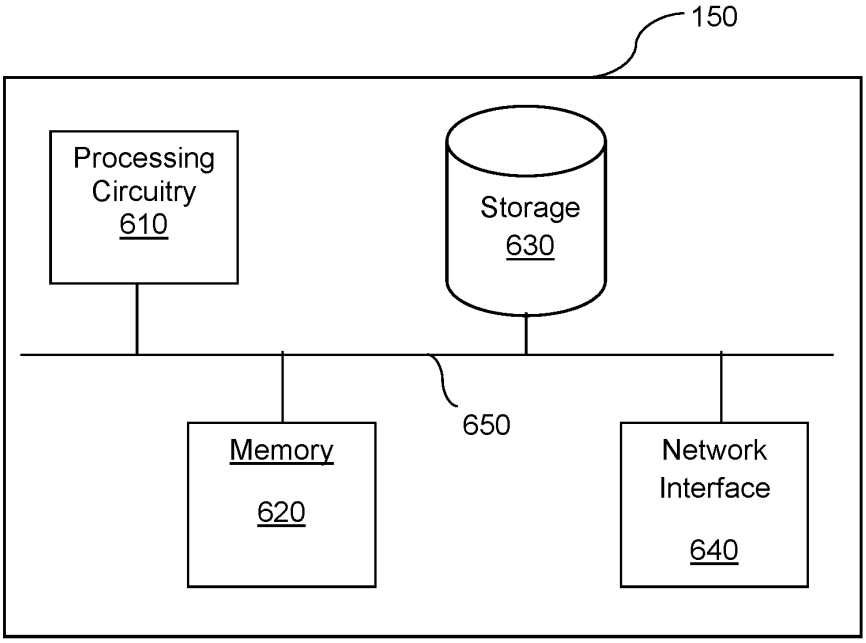

150
Processing Circuitry 610
Storage 630
650
Memory 620
Network Interface 640

FIG. 6

Electronic Patent Application Fee Transmittal					
Application Number:					
Filing Date:					
Title of Invention:	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES				
First Named Inventor/Applicant Name:	Danny SHEMESH				
Filer:	Michael Ben-Shimon/Chelsea Wuesthoff				
Attorney Docket Number:	WZIO P1933				
Filed as Small Entity					
Filing Fees for Utility under 35 USC 111(a)					
Description		**Fee Code**	**Quantity**	**Amount**	**Sub-Total in USD($)**
Basic Filing:					
UTILITY FILING FEE (ELECTRONIC FILING)		4011	1	80	80
UTILITY SEARCH FEE		2111	1	350	350
UTILITY EXAMINATION FEE		2311	1	400	400
Pages:					
Claims:					
CLAIMS IN EXCESS OF 20		2202	11	50	550
Miscellaneous-Filing:					
Petition:					

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1380**

Electronic Acknowledgement Receipt	
EFS ID:	41772804
Application Number:	17161190
International Application Number:	
Confirmation Number:	6419
Title of Invention:	SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES
First Named Inventor/Applicant Name:	Danny SHEMESH
Customer Number:	122066
Filer:	Michael Ben-Shimon/Chelsea Wuesthoff
Filer Authorized By:	Michael Ben-Shimon
Attorney Docket Number:	WZIO P1933
Receipt Date:	28-JAN-2021
Filing Date:	
Time Stamp:	17:00:43
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$1380
RAM confirmation Number	E20211RH00591349
Deposit Account	
Authorized User	
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	Transmittal of New Application	WZIO_P1933_transmittal_20210128.pdf	922374 515742c826648e292a115d1bbbe8889bca81fcc8	no	2
Warnings:					
Information:					
2	Application Data Sheet	WZIO_P1933_ads_20210128.pdf	1256257 84e27ba45c631e6af1c329f586f3aa88f665fc28	no	9
Warnings:					
Information:					
3	Oath or Declaration filed	WZIO_P1933_decl_assign_20210128.pdf	218717 550fa1545b7175ae99280f286e5cdd7aa0bd12ad	no	3
Warnings:					
Information:					
4	Miscellaneous Incoming Letter	WZIO_P1933_Authorization_to_Charge_deposit_account_20210128.pdf	71910 c1b821b7e5965fce7e08307077f1279790150ccd	no	1
Warnings:					
Information:					
5	Nonpublication request from applicant	WZIO_P1933_sb0035_npr_20210128.pdf	234195 195e6c6ae4d412fc13bea65e3546fb5604f8a94b	no	2
Warnings:					
Information:					
6	Internet Communications Authorized	WZIO_P1933_sb0439_20210128.pdf	74799 66570fbbae0e00e0daaf6d715b3354ec89ac1d28	no	2
Warnings:					
Information:					

7		WIZO_P1933_spec_drawings_20210128.pdf	774351 f1b5b77565036b3300848dffa172e29ec451e9e1	yes	47

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Specification	1	32
	Claims	33	38
	Abstract	39	39
	Drawings-only black and white line drawings	40	47

Warnings:

Information:

8	Fee Worksheet (SB06)	fee-info.pdf	36851 9303ba524a7ce910285cd01bb69df7bf1abbdf40	no	2

Warnings:

Information:

Total Files Size (in bytes):	3589454

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.

506475220 01/28/2021

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6521997

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DANNY SHEMESH	01/13/2021
LIRAN MOYSI	01/16/2021
ROY REZNIK	01/13/2021
SHAI KEREN	01/16/2021

RECEIVING PARTY DATA

Name:	WIZ, INC.
Street Address:	2345 YALE STREET
City:	PALO ALTO
State/Country:	CALIFORNIA
Postal Code:	94306

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	17161190

CORRESPONDENCE DATA

Fax Number: (908)274-3113

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 908-274-3111
Email: pair@mb-ip.com
Correspondent Name: M&B IP ANALYSTS, LLC
Address Line 1: 150 MORRISTOWN ROAD
Address Line 4: BERNARDSVILLE, NEW JERSEY 07924-2626

ATTORNEY DOCKET NUMBER:	WZIO P1933
NAME OF SUBMITTER:	MICHAEL BEN-SHIMON
SIGNATURE:	/Michael Ben-Shimon/
DATE SIGNED:	01/28/2021
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 3
source=WZIO_P1933_decl_assign_20210128#page1.tif

source=WZIO_P1933_decl_assign_20210128#page2.tif
source=WZIO_P1933_decl_assign_20210128#page3.tif

Attorney Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

As a below named inventor (designated as "the undersigned"), I hereby declare that:

This declaration is directed to: ☒ The attached application, or

☐ United States Application No.__ filed on _

The application is entitled:

SYSTEM AND METHOD FOR GENERATION OF UNIFIED GRAPH MODELS FOR NETWORK ENTITIES

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 have reviewed and understand the contents of the above-identified application.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

POWER OF ATTORNEY: I hereby appoint all attorneys and agents of **M&B IP ANALYSTS, LLC** who are listed under the USPTO Customer Number shown below as my attorneys to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith.

Address all correspondence to **CUSTOMER NUMBER 122066**.

The undersigned hereby acknowledges 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.

ASSIGNMENT

WHEREAS, **Wiz, Inc.**, having an address at **2345 Yale Street, Palo Alto, California 94306 USA** (hereinafter "ASSIGNEE"), is desirous of acquiring the entire right, title and interest in, to and under the above-identified application and invention, and to any Letters Patent(s) that may be granted therefor.
NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the undersigned has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, the entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventor's certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

Attorney Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

The undersigned authorizes and requests the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

The undersigned covenants and agrees that he has full right to convey the entire interest herein assigned, and has not executed, and will not execute, any agreement in conflict herewith.

The undersigned further covenants and agrees that he will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The undersigned hereby grants the practitioners of M&B IP Analysts, LLC the power to insert any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

In witness whereof, executed by the undersigned on the date opposite the undersigned name.

1. Full name of joint inventor: **Danny SHEMESH**

Inventor's Signature: / DocuSigned by: 48F7285C7A894A3... ***/ Date:*** 1/13/2021

Residence: Netanya, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

2. Full name of joint inventor: **Liran MOYSI**

Inventor's Signature: / ***/ Date:*** 1/16/2021

Residence: Kfar Saba, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

3. Full name of joint inventor: **Roy REZNIK**

Inventor's Signature: / DocuSigned by: ***/ Date:*** 1/13/2021

Residence: Tel Aviv, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA

Attorney Docket: WZIO P1933

DECLARATION AND ASSIGNMENT FOR PATENT APPLICATIONS

4. Full name of joint inventor: **Shai KEREN**

Inventor's Signature: /  ***/ Date:*** 01/16/2021

Residence: Ramat Gan, ISRAEL

Post Office Address: c/o Wiz, Inc., 2345 Yale Street, Palo Alto, California 94306 USA