Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/83B (07-13)
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POWER OF ATTORNEY BY APPLICANT

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

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 82318

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):

Fractal Industries, Inc.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	10 / 28 / 2015
Name	Jason Crabtree		
Title	CEO		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ Total of 1 forms are submitted.

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.

Electronic Acknowledgement Receipt

EFS ID:	36014416
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Kristen Riley
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	14-MAY-2019
Filing Date:	
Time Stamp:	21:22:14
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	190514_15026_ADS_AS_FILED.pdf	1257684 4400acae00fe2bc80bda861ca6370234ce9d5db8	no	15

Warnings:

Information:					
2		190514_15026_Final_AS_FILED.pdf	164710 9386c9d4aff60297fa468284d8227a8ab8ec1581	yes	36
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Abstract		36	36	
	Claims		33	35	
	Specification		1	32	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	190514_15026_Drawings_AS_FILED.pdf	1186918 963ed8e35594411d51dc90a96739d7349b50be59	no	18
Warnings:					
Information:					
4	Power of Attorney	190514_15026_POA_Fractal_AS_FILED.pdf	599596 ea1b279958fb09ace718d42e321f59edb16560c1	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	3208908		

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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
	Mike		Chasman	

Residence Information (Select One) ● US Residency Non US Residency Active US Military Service

City	State/Province	Country of Residence
Reston	VA	US

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210
Address 2	
City	Reston
State/Province	VA
Postal Code	20190
Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jeffrey		Chung	

Residence Information (Select One) ◉ US Residency Non US Residency Active US Military Service

City	State/Province	Country of Residence
Reston	VA	US

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210
Address 2	
City	Reston
State/Province	VA
Postal Code	20190
Country	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jason		Crabtree	

Residence Information (Select One) ◉ US Residency Non US Residency Active US Military Service

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

City	Vienna	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	10208 Westford Drive		
Address 2			
City	Vienna	State/Province	VA
Postal Code	22182	Country	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Luka		Jurukovski	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210		
Address 2			
City	Reston	State/Province	VA
Postal Code	20190	Country	US

Inventor 5 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Rich		Kelley	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210		
Address 2			
City	Reston	State/Province	VA
Postal Code	20190	Country	US

Inventor 6 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andre		Ludwig	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

PTO/AIA/14 (02-18)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210		
Address 2			
City	Reston	**State/Province**	VA
Postal Code	20190	**Country** i	US

Inventor 7 — Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Artem		Panasenkov	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	**State/Province**	VA	**Country of Residence** i	US

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210		
Address 2			
City	Reston	**State/Province**	VA
Postal Code	20190	**Country** i	US

Inventor 8 — Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andrew		Sellers	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Monument	**State/Province**	CO	**Country of Residence** i	US

Mailing Address of Inventor:

Address 1	16258 Windsor Creek Dr.		
Address 2			
City	Monument	**State/Province**	CO
Postal Code	80132	**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	32318

PAN Exhibit 1002
Page 6 of 497

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Email Address	USPTO@galvinpatentlaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES		
Attorney Docket Number	15026	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	18	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	82318		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/813097	2017-11-14
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/813097	Continuation in part of	15/616427	2017-06-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/616427	Continuation in part of	14/925974	2015-10-28
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/806697	2017-11-08

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/806697	Continuation in part of	15/376657	2016-12-13
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/376657	Continuation in part of	15/237625	2016-08-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/237625	Continuation in part of	15/206195	2016-07-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/206195	Continuation in part of	15/186453	2016-06-18
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/186453	Continuation in part of	15/166158	2016-05-26
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/166158	Continuation in part of	15/141752	2016-04-28
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	15/091563	2016-04-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	14/986536	2015-12-31
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	14/925974	2015-10-28

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/806697	2017-11-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/806697	Continuation in part of	15/343209	2016-11-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/343209	Continuation in part of	15/237625	2016-08-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/343209	Continuation in part of	15/229476	2016-08-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/229476	Continuation in part of	15/206195	2016-07-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/673368	2017-08-09
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/673368	Continuation in part of	15/376657	2016-12-13
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/849901	2017-12-21
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/849901	Continuation in part of	15/835312	2017-12-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/835312	Continuation in part of	15/186453	2016-06-18
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/849901	2017-12-21
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/849901	Continuation in part of	15/835436	2017-12-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/835436	Continuation in part of	15/790457	2017-10-23
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790457	Claims benefit of provisional	62/568298	2017-10-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790457	Continuation in part of	15/790327	2017-10-23
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Claims benefit of provisional	62/568291	2017-10-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Continuation in part of	15/616427	2017-06-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Continuation in part of	15/141752	2016-04-28

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

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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).

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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.

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PTO/AIA/14 (02-18)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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. ☒

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Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
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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.

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See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Brian S. Boon/			Date (YYYY-MM-DD)	2019-05-14
First Name	Brian	Last Name	Boon	Registration Number	77640

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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.**

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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.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

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

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.

ABSTRACT

A system and method that uses midservers located between the business enterprise computer infrastructure and the cloud-based infrastructure to collect, aggregate, analyze, transform, and securely transmit data from a multitude of computing devices and peripherals at an external network to a cloud-based service.

What is claimed is:

1. A system for ingestion of data into a cloud-based service from an external network, comprising:

a midserver configured to function as an interface between an external network and a cloud-based service comprising at least a processor, a memory, and a plurality of programming instructions stored in the memory and operating on the processor:

receive data from a plurality of computing devices on the external network;

run one or more containerized services to process the received data; and

securely transmit the processed data to a cloud-based service.

2. The system of claim 1, wherein the containerized services include one or more of the following types of containerized services: traffic processors, sensors, management services, and utilities.

3. The system of claim 1, wherein the midserver is installed at the same location from which some part of the external network is operated.

4. A method for ingestion of data into a cloud-based service from an external network, comprising the steps of:

installing a midserver as an interface between an external network and a cloud-based service, the midserver comprising at least a processor, a memory, and a plurality of programming instructions stored in the memory and operating on the processor:

receive data from a plurality of computing devices on the external network;

run one or more containerized services to process the received data; and

securely transmit the processed data to a cloud-based service.

5. The system of claim 4, further comprising the step of including one or more of the following types of containerized services: traffic processors, sensors, management services, and utilities.

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6. The system of claim 4, further comprising the step of installing the midserver at the same location from which some part of the external network is operated.

7. A method for deployment of a midserver for ingestion of data into a cloud-based service from an external network, comprising the steps of:

installing a midserver on an external network;

establishing a secure peer-to-peer connection from the midserver to an Ansible server at the cloud-based service;

initiating an Ansible playbook, which downloads a configuration template, retrieves security information for the external network at which the midserver is installed, and configures the midserver to establish a primary backhaul virtual private network between the midserver and the cloud-based service; and

closing the peer-to-peer connection.

8. A method for deployment of a midserver for ingestion of data into a cloud-based service from an external network wherein the external network comprises a virtual network operated on a cloud computing service, comprising the steps of:

establishing on the cloud computing service a virtual network controlled by the cloud-based service;

establishing a virtual machine on the virtual network controlled by the cloud-based service;

configuring the virtual machine on the virtual network controlled by the cloud-based service as a virtual network peer of the external network;

streaming data from the external network to the virtual machine configured as a virtual network peer of the external network; and

forwarding the streamed data from the virtual network peer to the cloud-based service.

9. A method for deployment of a midserver for ingestion of data into a cloud-based service from an external network wherein the external network comprises a virtual network operated on a cloud computing service, comprising the steps of:

establishing a virtual machine within the virtual network;

configuring the virtual machine on the virtual network as a virtual network peer of the external network;

streaming data from the external network to the virtual machine configured as a virtual network peer of the external network; and

forwarding the streamed data from the virtual network peer to the cloud-based service.

10. A method for preventing Kerberos-based cyberattacks using a midserver for ingestion of data into a cloud-based service from an external network, comprising the steps of:receiving Kerberos-based messaging between user computers, domain controllers, and Kerberos-based services;

maintaining a ledger of the monitored messages;

comparing the ledger against expected messages for Kerberos authentications to confirm the validity of the Kerberos authentication traffic.

SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

CROSS-REFERENCE TO RELATED APPLICATIONS

Application No.	Date Filed	Title
Current application	Herewith	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
		Is a continuation-in-part of:
16/267,893	Feb 5, 2019	SYSTEM AND METHODS FOR DETECTING AND CHARACTERIZING ELECTROMAGNETIC EMISSIONS
		which is a continuation-in-part of:
16/248,133	Jan 15, 2019	SYSTEM AND METHOD FOR MULTI-MODEL GENERATIVE SIMULATION MODELING OF COMPLEX ADAPTIVE SYSTEMS
		which is a continuation-in-part of:
15/813,097	Nov 14, 2017	EPISTEMIC UNCERTAINTY REDUCTION USING SIMULATIONS, MODELS AND DATA EXCHANGE
		which is a continuation-in-part of:
15/616,427	Jun 7, 2017	RAPID PREDICTIVE ANALYSIS OF VERY LARGE DATA SETS USING AN ACTOR-DRIVEN DISTRIBUTED COMPUTATIONAL GRAPH
		which claims benefit of, and priority to:
14/925,974	Oct 28, 2015	RAPID PREDICTIVE ANALYSIS OF VERY LARGE DATA SETS USING THE DISTRIBUTED COMPUTATIONAL GRAPH
Current application	Herewith	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
		Is a continuation-in-part of:
16/267,893	Feb 5, 2019	SYSTEM AND METHODS FOR DETECTING AND CHARACTERIZING ELECTROMAGNETIC EMISSIONS

		which is a continuation-in-part of:
16/248,133	Jan 15, 2019	SYSTEM AND METHOD FOR MULTI-MODEL GENERATIVE SIMULATION MODELING OF COMPLEX ADAPTIVE SYSTEMS
		which is also a continuation-in-part of:
15/806,697	Nov 8, 2017	MODELING MULTI-PERIL CATASTROPHE USING A DISTRIBUTED SIMULATION ENGINE
		which is a continuation-in-part of:
15/376,657	Dec 13, 2016	QUANTIFICATION FOR INVESTMENT VEHICLE MANAGEMENT EMPLOYING AN ADVANCED DECISION PLATFORM
		which is a continuation-in-part of:
15/237,625	Aug 15, 2016	DETECTION MITIGATION AND REMEDIATION OF CYBERATTACKS EMPLOYING AN ADVANCED CYBER-DECISION PLATFORM
		which is a continuation-in-part of:
15/206,195	July 8, 2016	ACCURATE AND DETAILED MODELING OF SYSTEMS WITH LARGE COMPLEX DATASETS USING A DISTRIBUTED SIMULATION ENGINE
		which is a continuation-in-part of:
15/186,453	June 18, 2016	SYSTEM FOR AUTOMATED CAPTURE AND ANALYSIS OF BUSINESS INFORMATION FOR RELIABLE BUSINESS VENTURE OUTCOME PREDICTION
		which is a continuation-in-part of:
15/166,158	May 26, 2016	SYSTEM FOR AUTOMATED CAPTURE AND ANALYSIS OF BUSINESS INFORMATION FOR SECURITY AND CLIENT-FACING INFRASTRUCTURE RELIABILITY
		which is a continuation-in-part of:
15/141,752	Apr 28, 2016	SYSTEM FOR FULLY INTEGRATED CAPTURE, AND ANALYSIS OF BUSINESS INFORMATION RESULTING IN PREDICTIVE DECISION MAKING AND SIMULATION
		which is a continuation-in-part of:
15/091,563	Apr 5, 2016	SYSTEM FOR CAPTURE, ANALYSIS AND STORAGE OF TIME SERIES DATA FROM SENSORS WITH HETEROGENEOUS REPORT INTERVAL PROFILES
		and is also a continuation-in-part of:

14/986,536	Dec 31, 2015	DISTRIBUTED SYSTEM FOR LARGE VOLUME DEEP WEB DATA EXTRACTION
		and is also a continuation-in-part of:
14/925,974	Oct 28, 2015	RAPID PREDICTIVE ANALYSIS OF VERY LARGE DATA SETS USING THE DISTRIBUTED COMPUTATIONAL GRAPH
Current application	Herewith	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
		Is a continuation-in-part of:
16/267,893	Feb 5, 2019	SYSTEM AND METHODS FOR DETECTING AND CHARACTERIZING ELECTROMAGNETIC EMISSIONS
		which is a continuation-in-part of:
16/248,133	Jan 15, 2019	SYSTEM AND METHOD FOR MULTI-MODEL GENERATIVE SIMULATION MODELING OF COMPLEX ADAPTIVE SYSTEMS
		which is a continuation-in-part of:
15/806,697	Nov 8, 2017	MODELING MULTI-PERIL CATASTROPHE USING A DISTRIBUTED SIMULATION ENGINE
		which is a continuation-in-part of:
15/343,209	Nov 4, 2016	RISK QUANTIFICATION FOR INSURANCE PROCESS MANAGEMENT EMPLOYING AN ADVANCED DECISION PLATFORM
		which is a continuation-in-part of:
15/237,625	Aug 15, 2016	DETECTION MITIGATION AND REMEDIATION OF CYBERATTACKS EMPLOYING AN ADVANCED CYBER-DECISION PLATFORM
		and is also a continuation-in-part of:
15/229,476	Aug 5, 2016	HIGHLY SCALABLE DISTRIBUTED CONNECTION INTERFACE FOR DATA CAPTURE FROM MULTIPLE NETWORK SERVICE SOURCES
		which is a continuation-in-part of:
15/206,195	July 8, 2016	ACCURATE AND DETAILED MODELING OF SYSTEMS WITH LARGE COMPLEX DATASETS USING A DISTRIBUTED SIMULATION ENGINE
Current application	Herewith	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

		Is a continuation-in-part of:
16/267,893	Feb 5, 2019	SYSTEM AND METHODS FOR DETECTING AND CHARACTERIZING ELECTROMAGNETIC EMISSIONS
		which is a continuation-in-part of:
16/248,133	Jan 15, 2019	SYSTEM AND METHOD FOR MULTI-MODEL GENERATIVE SIMULATION MODELING OF COMPLEX ADAPTIVE SYSTEMS
		which is a continuation-in-part of:
15/673,368	Aug 9, 2017	AUTOMATED SELECTION AND PROCESSING OF FINANCIAL MODELS
		which is a continuation-in-part of:
15/376,657	Dec 13, 2016	QUANTIFICATION FOR INVESTMENT VEHICLE MANAGEMENT EMPLOYING AN ADVANCED DECISION PLATFORM
Current application	Herewith	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
		Is a continuation-in-part of:
16/267,893	Feb 5, 2019	SYSTEM AND METHODS FOR DETECTING AND CHARACTERIZING ELECTROMAGNETIC EMISSIONS
		which is a continuation-in-part of:
16/248,133	Jan 15, 2019	SYSTEM AND METHOD FOR MULTI-MODEL GENERATIVE SIMULATION MODELING OF COMPLEX ADAPTIVE SYSTEMS
		which is a continuation-in-part of:
15/849,901	Dec 21, 2017	SYSTEM AND METHOD FOR OPTIMIZATION AND LOAD BALANCING OF COMPUTER CLUSTERS
		which is a continuation-in-part of:
15/835,312	Dec 7, 2017	SYSTEM AND METHODS FOR MULTI-LANGUAGE ABSTRACT MODEL CREATION FOR DIGITAL ENVIRONMENT SIMULATIONS
15/186,453	June 18, 2016	SYSTEM FOR AUTOMATED CAPTURE AND ANALYSIS OF BUSINESS INFORMATION FOR RELIABLE BUSINESS VENTURE OUTCOME PREDICTION
Current application	Herewith	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

		Is a continuation-in-part of:
16/267,893	Feb 5, 2019	SYSTEM AND METHODS FOR DETECTING AND CHARACTERIZING ELECTROMAGNETIC EMISSIONS
		which is a continuation-in-part of:
16/248,133	Jan 15, 2019	SYSTEM AND METHOD FOR MULTI-MODEL GENERATIVE SIMULATION MODELING OF COMPLEX ADAPTIVE SYSTEMS
		which is a continuation-in-part of:
15/849,901	Dec 21, 2017	SYSTEM AND METHOD FOR OPTIMIZATION AND LOAD BALANCING OF COMPUTER CLUSTERS
		which is a continuation-in-part of:
15/835,436	Dec 7, 2017	TRANSFER LEARNING AND DOMAIN ADAPTATION USING DISTRIBUTABLE DATA MODELS
		which is a continuation-in-part of:
15/790,457	Oct 23, 2017	DISTRIBUTABLE MODEL WITH BIASES CONTAINED WITHIN DISTRIBUTED DATA
		which claims benefit of, and priority to:
62/568,298	Oct 4, 2017	DISTRIBUTABLE MODEL WITH BIASES CONTAINED IN DISTRIBUTED DATA
		and is also a continuation-in-part of:
15/790,327	Oct 23, 2017	DISTRIBUTABLE MODEL WITH DISTRIBUTED DATA
		which claims benefit of, and priority to:
62/568,291	Oct 4, 2017	DISTRIBUTABLE MODEL WITH DISTRIBUTED DATA
		and is also a continuation-in-part of:
15/616,427	Jun 7, 2017	RAPID PREDICTIVE ANALYSIS OF VERY LARGE DATA SETS USING AN ACTOR-DRIVEN DISTRIBUTED COMPUTATIONAL GRAPH
		and is also a continuation-in-part of:
15/141,752	Apr 28, 2016	SYSTEM FOR FULLY INTEGRATED CAPTURE, AND ANALYSIS OF BUSINESS INFORMATION RESULTING IN PREDICTIVE DECISION MAKING AND SIMULATION

the entire specification of each of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

Field of the Art

[001] The disclosure relates to the field of computer technology, more specifically to the field of computer architectures for enterprise data collection, analysis, and transmission to cloud-based services.

Discussion of the State of the Art

[002] As cloud-based computing services become more popular, management of the data collection from a business and transmission of that data to a cloud-based service become more complicated. Large business enterprises can have thousands of computers and peripherals, many of which are now mobile devices. Collection, management, and security of data from those many devices becomes particularly important where data is being transferred to a cloud-based service.

[003] When a large business enterprise uses a cloud-based computing service, heterogeneous data transfer between cloud services and large offices or campuses for organizations presents numerous problems, including lack of reliable data collection methods, poor standardized support for connection-oriented protocols by network appliances, security concerns with unfiltered or poorly filtered data, and bandwidth concerns with constantly streaming data which may result in network slowdown due to unprioritized data transfer. Additionally, larger business enterprises may have thousands of computing devices sending data to a cloud-based service on separate connections, and each such connection represents an additional security risk. Further, current data collection and models do not scale well for adding new data sources and flexible ad-hoc queries, resulting in too much data being passed, no context for data and data sources oftentimes, unqueryable data and data sources, inability to flexibly and quickly add new data sources such as new devices or user accounts which generate new data for analysis, and log management and data storage become expensive and disorganized.

[004] The problem is compounded by the use of black box threat detection methods, where data management and security optimization are not possible for each organization or user of a cloud-based service. Particularly in the context of data ingestion systems, it is often unclear from a data stream what portion of the data results in triggering of certain security alerts, requiring many costly hours of analytics at best, or resulting in missed errors or security concerns at worst.

[005] What is needed is a computer architecture and methodology that allows for collection, aggregation, analysis, transformation, and secure transmission of data from a multitude of computing devices and peripherals at a business enterprise network to a cloud-based service.

SUMMARY OF THE INVENTION

[006] Accordingly, the inventor has conceived, and reduced to practice, a system and method that uses midservers integrated with the business enterprise computer infrastructure and the cloud-based infrastructure to collect, aggregate, analyze, transform, and securely transmit data from a multitude of computing devices and peripherals at an external network to a cloud-based service. The following non-limiting summary of the invention is provided for clarity, and should be construed consistently with embodiments described in the detailed description below.

[007] According to a preferred embodiment, a system for ingestion of data into a cloud-based service from an external network is disclosed, comprising: a midserver configured to function as an interface between an external network and a cloud-based service comprising at least a processor, a memory, and a plurality of programming instructions stored in the memory and operating on the processor: receive data from a plurality of computing devices on the external network; run one or more containerized services to process the received data; and securely transmit the processed data to a cloud-based service.

[008] According to another preferred embodiment, a method for ingestion of data into a cloud-based service from an external network is disclosed, comprising the steps of: installing a midserver as an interface between an external network and a cloud-based service, the midserver comprising at least a processor, a memory, and a plurality of programming instructions stored in the memory and operating on the processor: receiving data from a plurality of computing devices on the external network; running one or more containerized services to process the received data; and securely transmitting the processed data to a cloud-based service.

[009] According to an aspect of an embodiment, the containerized services include one or more of the following types of containerized services: traffic processors, sensors, management services, and utilities.

[010] According to an aspect of an embodiment, the midserver is installed at the same location from which some part of the external network is operated.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

[011] The accompanying drawings illustrate several aspects and, together with the description, serve to explain the principles of the invention according to the aspects. It will be appreciated by one skilled in the art that the particular arrangements illustrated in the drawings are merely exemplary, and are not to be considered as limiting of the scope of the invention or the claims herein in any way.

[012] **Fig. 1** is a diagram of an exemplary midserver system architecture .

[013] **Fig. 2** is a diagram of an exemplary midserver architecture showing data input to a midserver and the ingestion of forwarded data from a midserver through a proxy to a cloud service.

[014] **Fig. 3** is a diagram of an exemplary midserver architecture between multiple office locations.

[015] **Fig. 4** is diagram of another exemplary midserver architecture between multiple office locations.

[016] **Fig. 5A** is a partial diagram of an exemplary advanced cyber-decision platform utilizing midserver architecture.

[017] **Fig. 5B** is a partial diagram of an exemplary advanced cyber-decision platform utilizing midserver architecture.

[018] **Fig. 5C** is a partial diagram of an exemplary advanced cyber-decision platform utilizing midserver architecture.

[019] **Fig. 6** is a diagram showing an exemplary architecture and methodology for midserver deployment, automated onboarding of data, and endpoint transparent data transport.

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[020] **Fig. 7** is an exemplary method for deploying a midserver where the business enterprise network is located on, or utilizes, a cloud computing service such as Amazon Web Services (AWS) or Microsoft's Azure.

[021] **Fig. 8** is another exemplary method for deploying a midserver where the business enterprise network is located on, or utilizes, a cloud computing service such as Amazon Web Services (AWS) or Microsoft's Azure.

[022] **Fig. 9** is a diagram showing an overview of the methodology of two of several known Kerberos attacks.

[023] **Fig. 10** is a diagram showing an overview of the use of a ledger of Kerberos requests and responses to provide security against Kerberos attacks.

[024] **Fig. 11A** is a partial diagram of an exemplary analytic workflow for validation of a Kerberos ticket-based security protocol for use in an observed system.

[025] **Fig. 11B** is a partial diagram of an exemplary analytic workflow for validation of a Kerberos ticket-based security protocol for use in an observed system.

[026] **Fig. 12** is a block diagram illustrating an exemplary hardware architecture of a computing device.

[027] **Fig. 13** is a block diagram illustrating an exemplary logical architecture for a client device.

[028] **Fig. 14** is a block diagram showing an exemplary architectural arrangement of clients, servers, and external services.

[029] **Fig. 15** is another block diagram illustrating an exemplary hardware architecture of a computing device.

DETAILED DESCRIPTION

[030] The inventor has conceived, and reduced to practice, a system and method that uses midservers located between the business enterprise computer infrastructure and the cloud-based

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infrastructure to collect, aggregate, analyze, transform, and securely transmit data from a multitude of computing devices and peripherals at an external network to a cloud-based service.

[031] One method of data collection from large business enterprises for cloud-based computing is through agent based monitoring. In agent-based monitoring, software "agents" are installed on each computing device to collect data and then forward the data to the cloud-based service. Using agent-based monitoring, it may be necessary to install hundreds or thousands of agents on an external network to collect the required data. Each of these agents, in turn, establish an outgoing network connection to provide data to the cloud-based service. While secure transport protocols such as TLS can ensure data security, the overall number of connections to monitor at the business network edge increases substantially. This causes even more noise for network defenders to sift through. By aggregating data at midservers multiple connections can be presented over the network as a single secure connection to enterprise cloud-based systems (wlog using standard VPN or similar encryption-based network transport technologies). Thousands of connections from a large business enterprise can be reduced to a single connection or a small number of connections. It should be noted that another method of gathering data from a business enterprise network is through port mirroring. The terms "agent" and "port mirroring" are exemplary only, and do not exclude other methods of gathering data from a business enterprise network.

[032] Midserver architecture also solves the problem that not all devices support secure data transport. For example, many devices do not natively support sending system log messages using TLS. In order to support system log traffic the data must be wrapped in a secure protocol before leaving the network. A midserver can provide this type of capability by collecting and wrapping the data before it leaves the network.

[033] Midservers can optimize the ingestion of data into the cloud-based service by transforming the data prior to forwarding upstream. It is possible to process the data on the external network computers using an agent or additional software, but this adds complexity to the agent or requires more software installed on customer site. A midserver can act as a local

processing station (often called "pre-processing") for data transformations such as compression, protocol wrapping, port bending, and many others.

[034] Midservers can be used to prevent data loss during transmission, especially for network data that is transitory in nature. For many protocols the sender/receiver can adjust for a degraded connection without any loss of data integrity. Additionally, in some other cases the originating message can be reproduced meaning that a loss of data has little impact on the capability. For example, some agents query the current state of the system and then forward the results to a fleet manager. If the results are somehow lost during transit it is possible to issue the same query and try again. However, other data sources such as network packet captures are much less forgiving. Systems that capture ephemeral network traffic are especially impacted by data lost in transit. A midserver can mitigate this risk by providing traffic buffering in the event that the backhaul connection goes down. When the connection is reestablished, the buffers will empty and continue forwarding as usual.

[035] The midserver architecture may be designed to operate as a bastion host that runs a collection of containerized services. It is assumed that midservers are cyber security targets and are likely to be compromised at some point. Ideally, therefore, the midserver should be designed to reduce data loss and further access to the enterprise network to which it is attached. Midservers should not be a primary data store, and should only buffer data when connections are lost. Midservers should have only the minimum software necessary to operate, and least privilege should be enforced for access. Midservers may be configured as a single server instance or as a clusters of redundant servers to provide additional resiliency.

[036] The midserver runs a plurality of containerized services that serve to collect, aggregate, analyze, transform, and securely transmit data. The containerized service run by the midserver can be roughly categorized in four ways: traffic processors, sensors, management services, and utilities.

[037] Containers acting as traffic processors are primarily used to receive forwarded traffic from a customer network, transform the traffic if necessary, and then forward the traffic upstream over the primary connection. Several examples of traffic processing containerized services are: reverse

proxy containers, system log containers, and messaging containers. An example of a reverse proxy containerized service is Nginx. The Nginx proxy (nginx-pxy) provides reverse proxy capabilities that allows customer traffic to send approved data through the midserver. Data and log sources that support the proxy protocol will connect to this service. The service also provides traffic transform capabilities such as http to https forwarding and others as supported by Nginx. In a system log containerized service, the service provides log consolidation and forwarding capabilities for logs sent using the system log protocol. The service also provides message shaping and enrichment such as adding additional contextual fields to log sources if needed. An example of a messaging containerized service is RabbitMQ. The RabbitMQ service acts as a proxy for advanced messaging queueing protocol (AMQP) messages using the Shovel plugin. The service is primarily used for queuing and forwarding of traffic generated by messaging agents, and can support any AMQP traffic as needed. Another traffic processing containerized service example is Consul, which provides service discovery and is may be used to support RabbitMQ configurations in a midserver cluster.

[038] Containers acting as sensors can monitor and generate data rather than just process data from other sensors or data sources.

[039] Management containers are used for providing management consoles or services for midserver administrators. Examples of management containers include the Nginx management proxy and Portainer. The Nginx management proxy (nginx-mgt) is responsible for managing connections to management interfaces on containers. This containerized service acts a firewall to only allow traffic to management pages and services originating from approved address spaces. Portainer provides a lightweight management UI which allows adminstrators to easily manage and monitor the other container services on the midserver.

[040] Utility containers are special purpose tools used to aid in configuration or deployment of a midserver.

[041] Consolidating these containerized services at the midserver allows for large-scale, reliable ingestion (i.e., one or more of collection, aggregating, analysis (pre-processing), transformation (pre-processing), and secure transmission) of data into a cloud-based service from an external

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network. This improves data consistency, reliability, efficiency of bandwidth usage, and security. Using the midserver as a gateway to the cloud-based service dramatically reduces the number of connections at the business enterprise's network edge, greatly reducing the number of avenues of attack and improving network security.

[042] One or more different aspects may be described in the present application. Further, for one or more of the aspects described herein, numerous alternative arrangements may be described; it should be appreciated that these are presented for illustrative purposes only and are not limiting of the aspects contained herein or the claims presented herein in any way.

[043] One or more of the arrangements may be widely applicable to numerous aspects, as may be readily apparent from the disclosure. In general, arrangements are described in sufficient detail to enable those skilled in the art to practice one or more of the aspects, and it should be appreciated that other arrangements may be utilized and that structural, logical, software, electrical and other changes may be made without departing from the scope of the particular aspects. Particular features of one or more of the aspects described herein may be described with reference to one or more particular aspects or figures that form a part of the present disclosure, and in which are shown, by way of illustration, specific arrangements of one or more of the aspects. It should be appreciated, however, that such features are not limited to usage in the one or more particular aspects or figures with reference to which they are described. The present disclosure is neither a literal description of all arrangements of one or more of the aspects nor a listing of features of one or more of the aspects that must be present in all arrangements.

[044] Headings of sections provided in this patent application and the title of this patent application are for convenience only, and are not to be taken as limiting the disclosure in any way.

[045] Devices that are in communication with each other need not be in continuous communication with each other, unless expressly specified otherwise. In addition, devices that are in communication with each other may communicate directly or indirectly through one or more communication means or intermediaries, logical or physical.

[046] A description of an aspect with several components in communication with each other does not imply that all such components are required. To the contrary, a variety of optional components may be described to illustrate a wide variety of possible aspects and in order to more fully illustrate one or more aspects. Similarly, although process steps, method steps, algorithms or the like may be described in a sequential order, such processes, methods and algorithms may generally be configured to work in alternate orders, unless specifically stated to the contrary. In other words, any sequence or order of steps that may be described in this patent application does not, in and of itself, indicate a requirement that the steps be performed in that order. The steps of described processes may be performed in any order practical. Further, some steps may be performed simultaneously despite being described or implied as occurring non-simultaneously (e.g., because one step is described after the other step). Moreover, the illustration of a process by its depiction in a drawing does not imply that the illustrated process is exclusive of other variations and modifications thereto, does not imply that the illustrated process or any of its steps are necessary to one or more of the aspects, and does not imply that the illustrated process is preferred. Also, steps are generally described once per aspect, but this does not mean they must occur once, or that they may only occur once each time a process, method, or algorithm is carried out or executed. Some steps may be omitted in some aspects or some occurrences, or some steps may be executed more than once in a given aspect or occurrence.

[047] When a single device or article is described herein, it will be readily apparent that more than one device or article may be used in place of a single device or article. Similarly, where more than one device or article is described herein, it will be readily apparent that a single device or article may be used in place of the more than one device or article.

[048] The functionality or the features of a device may be alternatively embodied by one or more other devices that are not explicitly described as having such functionality or features. Thus, other aspects need not include the device itself.

[049] Techniques and mechanisms described or referenced herein will sometimes be described in singular form for clarity. However, it should be appreciated that particular aspects may include multiple iterations of a technique or multiple instantiations of a mechanism unless noted

otherwise. Process descriptions or blocks in figures should be understood as representing modules, segments, or portions of code which include one or more executable instructions for implementing specific logical functions or steps in the process. Alternate implementations are included within the scope of various aspects in which, for example, functions may be executed out of order from that shown or discussed, including substantially concurrently or in reverse order, depending on the functionality involved, as would be understood by those having ordinary skill in the art.

Definitions

[050] "Bastion host" as used herein means a computer that is deliberately exposed on a public network as the primary or only node or the network exposed to the outside world. A bastion host processes and filters all incoming traffic and prevents malicious traffic from entering the network.

[051] "Ingestion" as used herein means the transfer of data into a cloud-based service.

[052] "Midserver" as used herein means a server that functions as an interface between an external network and a cloud-based service, and which runs one or more containerized services that perform one or more of: collecting, aggregating, analyzing, filtering, transforming, and securely transmitting data. A midserver may also be configured as a bastion host.

Conceptual Architecture

[053] **Fig. 1** is a diagram of an exemplary midserver system architecture. A network **110** exists connecting a cloud service **130**, through a firewall or security layer **112**, as well as an on-site security layer or firewall **111** with some organization which may wish to connect over a network **110** to a cloud service **130**. A demilitarized zone ("DMZ," also known as a perimeter network or screened subnet) **120** is present which may present the forward-facing network connections and functionality of an organization's network or services, which may be forwarded data or interface further with on-site servers **150** and user endpoints **160**, or data log sources **140**. On-site servers **150** may include a midserver **151** for collecting, aggregating, analyzing, filtering, transforming, and securely transmitting data data transfers and interactions with a cloud service **130**, typically

co-located with the enterprise domain controller (or Active Directory (AD) server) 152 for exploration of network-enabled directories and to control access to and authenticate security requests on the network for other connected servers 150. A midserver 151 in this implementation may be used for streamlined communications with a cloud service 130 including a single point of connectivity with the service, a ticket form of security adding further security to such a connected system, and a batch method of data transfer, allowing numerous other servers 150 or endpoints 160 or log sources 140 to communicate with the midserver which then collates data for transfer to a cloud server 130, which may further collate data received from the cloud service 130, for ease of analysis and which allows for other forms of network optimization to take place which are not present in systems where numerous endpoints and servers maintain individual connections to a cloud service 130, also allowing for new data sources including servers 150 and endpoints 160 to be added swiftly and integrated into the system for connection to the cloud service 130 rapidly and easily due to the midserver 151 acting as an interface between the service 130 and the other possible endpoint 160 or server 150.

[054] **Fig. 2** is a diagram of an exemplary midserver architecture showing data input to a midserver and the ingestion of forwarded data from a midserver through a proxy to a cloud service. Cloud sources 211 of customer monitoring agents 210 may provide input to a proxy server 240 behind a firewall 230 which filters data going in and out of an organization's network. These sources of customer network monitoring agents 210 may include data that is gathered from online tools such as social media crawlers or any other source of customer network monitoring from a cloud service or network 211. On-site data monitoring tools and processes include endpoint responses 211, network traffic data 212, events and metrics 213 which may include metadata about devices, users, or other connected assets, active directory 214 usage, and process monitoring 215 which may monitor active processes on connected assets such as operations performed on a connected network endpoint such as a computer workstation. Data from these sources is sent to a midserver 220 which may be on-site or connected to via a Virtual Private Network (VPN), before the data is sent to through an organizations firewall 230 to a proxy server 240, to be forwarded to a cloud service's data ingestion pipeline 250. Such a data ingestion pipeline 250 may include the use of a load balancer 251 to aid in processing of

received data loads from differing sources, system log servers 252 which may record the reception and content of data or any other metadata about the connection to a proxy server 240 and the activity of the load balancer 251, before forwarding data to a distributed messaging system 253 which may separate received data and data streams into related "topics" which may be defined by the sender's identity, metadata about the streams or batches of data, or some other qualifier. Ingestion pipelines 254 may process data by filtering, mapping, parsing, and sanitizing data received, before adding it to a temporal knowledge graph 255 representing a graph of assets, people, events, processes, services, and "tickets" of concerns, as well as data about the edges connecting such nodes in the graph such as their relationship, over time.

[055] Fig. 3 is a diagram of an exemplary midserver architecture between multiple office locations. A cloud service 310 exists which connects to a may connect to a main office 340 but not a satellite office 330 over a network such as the Internet, with a VPN 320 connected between the networks of the offices. A satellite office 330 contains numerous assets including log sources 331, user endpoints 332, and a server or servers 333 which include the functionality of an Active Directory (AD) server 334 and domain controller 335. Also operating on a satellite office 330 is firewall 336, in addition to firewall on a main office's network 347, which provides basic security to a satellite office's network 330 and a main office's network 340. Connected via a VPN 320 with a satellite office 330 is a main office 340, which comprises many of the same components, including log sources 341, at least one user endpoint 342, and a group of servers 343 including at least an AD server 345 and domain controller 346, as well as a midserver 344, which may communicate with a satellite office 330 to provide access to midserver functionality without using the satellite office's 330 bandwidth to external networks. Midservers 344 may be deployed as a single instance, or as a cluster depending on the traffic volume leaving the office 340 premise to support high availability operational requirements. These servers may be co-located with the domain controllers 346 and other servers 343, but may be placed anywhere on the network. The exact number and configuration of midservers 344 may be tailored to the organizational environment and the specific overall network architecture. It is possible to place a midserver 344 (or cluster of such) at the main office 340 only, as shown in Fig. 3. In this configuration, the agents (or log source 331) installed at the satellite office 330 will forward all traffic across the

VPN connection 320 to the Midserver 344 at the Main Office 340, which will then forward the traffic to the cloud infrastructure 310 via the gateway at that location.

[056] **Fig. 4** is diagram of another exemplary midserver architecture between multiple office locations. An alternative configuration compared to **Fig. 3** is shown, placing one or more midservers at the satellite office and allowing traffic to egress the network locally instead of through a VPN connection to other locations. A cloud service 410 exists which connects directly to a main office 430 and a satellite office 420 over a network such as the Internet. A satellite office 420 contains numerous assets including log sources 421, user endpoints 422, and a server or servers 423 which include the functionality of a midserver 424, an Active Directory (AD) server 425, and a domain controller 426. Also operating on a satellite office 420 is firewall 427, in addition to firewall on a main office's network 437, which provides basic security to a satellite office's network 420 and main office network 430. Connected also with a cloud service 410 is a main office network 430, which comprises many of the same components, including log sources 431, at least one user endpoint 432, and a group of servers 433 including at least an AD server 435 and domain controller 436, as well as a midserver 434, allowing for both office networks 420, 430 to have midserver functionality without requiring a direct or virtual connection.

[057] **Fig. 5A** is a partial diagram of an exemplary advanced cyber-decision platform utilizing midserver architecture. A plurality of software agents may monitor an organization's network usage, including but not limited to a Kerberos messaging capture (PcapKrb) agent 501 continuous monitoring (Application Performance Monitoring) agents 502, Osquery agents 503, active directory monitoring (ADMon) agents 504, and other agents 505 which may include, for example, data received from system log (syslog) data stores. The plurality of network monitoring agents may feed into a midserver or midservers 510 that may contain message and data processing containerized services, for example: a RabbitMQ container 511, an NGINX container 512, a system log container 513, a continuous monitoring module 514, an Osquery engine 515. The midserver 510 The midserver 510 may communicate through a network firewall 520, to a reverse proxy 531 which may mask the external-facing properties of an internal server 532 of a cloud service. A reverse proxy 531 may forward relevant data, or all data, received from a

midserver 510, to an internal server 532, which utilizes a load balancer 533 to process data efficiently and effectively despite possibly asymmetrical or massive network loads, or dynamically changing loads.

[058] **Fig. 5B** is a partial diagram of an exemplary advanced cyber-decision platform utilizing midserver architecture. An observed system 540 is a system that is monitored by an exemplary advanced cyber-decision platform that may communicate with a midserver 510, and may contain at least a message digestion and management service such as RabbitMQ 541, a log listener 542 which communicates with a system log server 543 for the purpose of managing, monitoring, and storing system logs. An observed system may also include an Observer Reporting Server (ORS) 544, which may communicate with an Osquery Agent Handler 545, allowing management, recording, and monitoring of users and systems who use Osquery or a similar system to query a device or server similarly to a database, as is the purpose of Osquery. Also present is a ConMon Agent Handler 546 which my operate as an interface to continuous monitoring connected systems, acting as an interface for a ConMon service 547, which receives further input from systems illustrated in **Fig. 5C** and may communicate with a statistics aggregator 548.

[059] **Fig. 5C** is a partial diagram of an exemplary advanced cyber-decision platform utilizing midserver architecture. Data flows from an observed system 540 into a directed computational graph (DCG) 554, and a Multivariate Time-Series Database (MDTSDB) 556. Data from a DCG 554 may move to an enrichment service 553, connected to a plurality of differently structured databases such as MySQL 552 and Redis 551, an enrichment service being able to store and record relevant graph data in these databases 552, 551 and also forward related stored data to a DCG 554, for the purpose of increased accuracy with data processing. A DCG 554 also may send data to a multi-dimensional time series database (MDTSDB) service 556 which relates all received data and records the temporal metadata, resulting in a multidimensional temporal graph with which to relate data, as generated with the help of a graphstack service 555. A graphstack service manages data received from a MDTSDB service 556 and produces the final graph results, with both the results and operation of the MDTSDB 556 and graphstack service 555 being viewable from a cloud service's front end 561, which may also communicate with a

plurality of datastores 557, 559, 560. A graphstack service 555 may also forward data to an enrichment service 553 for storage in the connected databases 551, 552, allowing for a constant stream of graph data to be maintained. Lastly, an incident service 558 may be used to receive incident or error data from a directed computational graph 554, recording these incidents in a plurality of databases 559, 560.

[060] Fig. 6 is a diagram showing an exemplary architecture and methodology 600 for midserver deployment, automated onboarding of data, and endpoint transparent data transport. Midserver deployment comprises establishment of a secure connection between the midserver side 610 and the cloud-based service side 620. After a midserver 611 is physically installed, an automated package called a midserver Open Virtual Appliance (OVA) is installed and run on the midserver 611. The OVA in this example is a virtual image pre-installed with only the minimal software on configurations required to initate the deployment process. The OVA will initiate a bootstrap process to establish a secure Peer-to-Peer (P2P) connection to the cloud-based service side. Using ZeroTier as an example of a P2P connection, the OVA will initiate a ZeroTier Controller 612, which is responsible for admitting members to the VPN, issuing certificates, and issuing default configuration information. ZeroTier establishes a secure P2P connection over a virtually extensible local area network (VXLAN) called the Reachback Network. Once the initial connection is requested, a representative of the cloud-based service, either onsite 613a or offsite 613b, will verify and approve the connection using a secret key. After a secure connection is established between the midserver and the cloud-based service side at an Ansible server 621, an Ansible playbook is automatically initiated. First, the playbook downloads the most recent configuration template from a configuration controller 622. Next it connects to a deployment vault 623 instance to retrieve the customer specific configurations including any secrets (e.g. passwords, keys, etc) which will have been previously established by a representative of the cloud-based service 613b. A ZeroTier network application programming interface (API) acts as an adhoc Ansible inventory and a single source of truth for which systems have previously connected to the P2P network. Then, the playbook then begins configurating the midserver 611 via an ssh connection tunnel, establishing a primary backhaul virtual private network (VPN) connection to the cloud-based service. Once this connection is made the

midserver tears down the Reachback Network and all communcation is done over the VPN through a firewall **616** on the customer network edge. The VPN created using this methodology then allows containerized services **614** to forward data using transport layer security (TLS) **615** to the cloud-based service, allowing for longhaul transportation of data that is transparent to the network endpoint. Some implementations may use external web serving, reverse proxying, caching, and load balancing such as external Nginx **624**, data center load balancing and caching such as DCOS Nginx **625**, and microservices and container orchestration such as Nginx Plus **626**.

[061] **Fig. 7** is an exemplary method **700** for deploying a midserver where the business enterprise network is located on, or utilizes, a cloud computing service such as Amazon Web Services (AWS) or Microsoft's Azure. In cloud computing services, all or part of the business enterprise's network is run on the servers of the cloud computing service. Use of midserver architecture where the business enterprise utilizes cloud computing services poses difficulties because the cloud computing service infrastructure is not controlled by the business enterprise, and thus the business enterprise may not be able to authorize the installation of 3rd party software (e.g., Kerberos agents, and other software agents that monitor network traffic) on all or a part of its network. The solution to this problem is to utilize the cloud computing service's functions that allow continuous streaming of virtual machine network traffic to a network packet collector or analytics tool. Using Microsoft's Azure Active Directory service and its virtual network terminal access point (vTAP) as an example, the Azure Active Directory (Azure AD) is a cloud-based identity and access management service that allows employees of a business enterprise to access both external and internal resources. The vTAP function allows continuous streaming of cloud computing service network traffic to a network packet collector or analytics tool, and operates in a manner roughly equivalent to traditional port mirroring. Where the business enterprise manages its own network of virtual machines on the cloud computing service, it may still be possible to install software agents, although use of a continuous streaming function may be more efficient. Where the business enterprise uses the cloud computing service for managed domain services, however, the business enterprise does not have authorization to install agents, and the continuous streaming (port mirroring) function will need to be used to deploy a midserver

architecture. In this example, a customer (business enterprise) virtual network **720** is established within the cloud computing service **710**. The customer virtual network comprises a number of virtual machines **721a-n**, operated on one or more of the cloud computing service **710** servers **722**. Separately, a cloud-based service network is established on the cloud computing service **710** and is controlled by the cloud-based service **740** to which data is to be forwarded. Using the continuous streaming function available on the cloud computing service **710**, for example vTAP for the Azure Active Directory service, a virtual machine on the cloud-based service network **730** is established as a virtual network peer VM **731** to the customer virtual network **720**, and all data from the customer virtual network **720** is continuously streamed from the cloud computing service server(s) **722** to the virtual network peer VM **731**, which forwards the data to the cloud-based service **740**.

[062] **Fig. 8** is another exemplary method **800** for deploying a midserver where the business enterprise network is located on, or utilizes, a cloud computing service such as Amazon Web Services (AWS) or Microsoft's Azure. In this example, a customer (business enterprise) virtual network **820** is established within the cloud computing service **810**. The customer virtual network comprises a number of virtual machines **821a-n**, operated on one or more of the cloud computing service **810** servers **822**. The customer also operates on the customer virtual network **820** a virtual network peer VM **823** that is configured to aggregate and forward data to the cloud-based service **830**, using the continuous streaming function available on the cloud computing service **810**, for example vTAP for the Azure Active Directory service. In this manner, all data from the customer virtual network **820** is continuously streamed from the cloud computing service server(s) **822** to the virtual network peer VM **823**, which forwards the data to the cloud-based service **830**.

[063] **Fig. 9** is a diagram showing an overview of the methodology of two of several known Kerberos attacks. In the so-called "golden ticket" attack **900**, after a client computer **901** has been compromised, a forged ticket is sent to the domain controller **902**, which grants access to all servers in the network, and the host server **903** is accessed using the granted access. In the so-called "silver ticket" attack **910**, after a client computer **911** has been compromised, a forged

ticket granting service (TGS) ticket is sent directly to the host server **913** to be attacked. The host server receiving the forged TGS ticket grants access to the client computer **911** to grant access tickets, which are then used to access the host server **913**. Unlike in the golden ticket attack, in the silver ticket attack, the domain controller **912** is not involved in granting access.

[064] **Fig. 10** is a diagram showing an overview of the use of a ledger of Kerberos requests and responses to provide security against Kerberos attacks **1000**. In a typical Kerberos authentication interaction, several requests and responses are sent between a user computer **1001**, a domain controller, **1002**, and a Kerberos-enabled service **1003**. Maintaining a ledger **1004** of these requests and responses effectively transforms the Kerberos protocol from a stateless to a stateful one, allowing confirmation of the validity of traffic and providing additional protection against Kerberos attacks.

[065] **Fig. 11A** is a partial diagram of a security analytic workflow validating an exemplary Kerberos ticket-based security protocol for use in an observed system in order to detect common attacks against the Kerberos protocol including those known by the industry as Golden Ticket, Silver Ticket, DCSync, and DCShadow. A messaging source **1101**, such as RabbitMQ or NGINX, forwards received data messages to a FPRS split stage **1102**, where specific message states are determined and separated to identify high priority tickets, and sent through appropriate processing pipelines. An "OTHER" stage **1103** represents unknown ticket priority and is forwarded to a JSON field extractor **1104** which extracts relevant data fields in Javascript Object Notation (JSON), which is a common data format for object representation in data analytics. A stage where no message is present **1105** represents a ticket with missing information, therefore being sent for an enrichment stage **1106** before being sent to a similar JSON field extractor **1104**. An error stage **1107** may also be reached, resulting in the ticket being sent to an Abstract Syntax Notation One (ASN1) decoder **1108**, ASN1 being a standard interface description language for defining data structures. If an otherwise normal message is present for a ticket stage **1109**, it is sent directly for JSON field extraction **1104**.

[066] **Fig. 11B** is a partial diagram of a security analytic workflow validating an exemplary Kerberos ticket-based security protocol for use in an observed system in order to detect common

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attacks against the Kerberos protocol including those known by the industry as Golden Ticket, Silver Ticket, DCSync, and DCShadow. JSON field data that is extracted **1104** is then forwarded for being placed into a MDTSDB **1111**, resulting in it being stored for later use in a temporal knowledge graph. After an error message is ASN1 decoded **1108**, it is sent for JSON field extraction **1112**, before also being recorded in a MDTSDB **1113**. Once a no-message stage has been enriched **1106**, it is sent to a secondary FPRS split stage **1114**, where the enriched ticket is now determined to possess either an unknown or "OTHER" stage message **1115** and not stored anywhere **1116**, or it has a DC_SYNC **1117** or DC_SHADOW **1120** message. In either of the latter two cases a the message is converted into an exemplary advanced malware protection (AMP) alert **1118, 1121** and stored in an MDTSDB **1119**.

Hardware Architecture

[067] Generally, the techniques disclosed herein may be implemented on hardware or a combination of software and hardware. For example, they may be implemented in an operating system kernel, in a separate user process, in a library package bound into network applications, on a specially constructed machine, on an application-specific integrated circuit ("ASIC"), or on a network interface card.

[068] Software/hardware hybrid implementations of at least some of the aspects disclosed herein may be implemented on a programmable network-resident machine (which should be understood to include intermittently connected network-aware machines) selectively activated or reconfigured by a computer program stored in memory. Such network devices may have multiple network interfaces that may be configured or designed to utilize different types of network communication protocols. A general architecture for some of these machines may be described herein in order to illustrate one or more exemplary means by which a given unit of functionality may be implemented. According to specific aspects, at least some of the features or functionalities of the various aspects disclosed herein may be implemented on one or more general-purpose computers associated with one or more networks, such as for example an end-user computer system, a client computer, a network server or other server system, a mobile computing device (e.g., tablet computing device, mobile phone, smartphone, laptop, or other

appropriate computing device), a consumer electronic device, a music player, or any other suitable electronic device, router, switch, or other suitable device, or any combination thereof. In at least some aspects, at least some of the features or functionalities of the various aspects disclosed herein may be implemented in one or more virtualized computing environments (e.g., network computing clouds, virtual machines hosted on one or more physical computing machines, or other appropriate virtual environments).

[069] Referring now to **Fig. 12**, there is shown a block diagram depicting an exemplary computing device **10** suitable for implementing at least a portion of the features or functionalities disclosed herein. Computing device **10** may be, for example, any one of the computing machines listed in the previous paragraph, or indeed any other electronic device capable of executing software- or hardware-based instructions according to one or more programs stored in memory. Computing device **10** may be configured to communicate with a plurality of other computing devices, such as clients or servers, over communications networks such as a wide area network a metropolitan area network, a local area network, a wireless network, the Internet, or any other network, using known protocols for such communication, whether wireless or wired.

[070] In one embodiment, computing device **10** includes one or more central processing units (CPU) **12**, one or more interfaces **15**, and one or more busses **14** (such as a peripheral component interconnect (PCI) bus). When acting under the control of appropriate software or firmware, CPU **12** may be responsible for implementing specific functions associated with the functions of a specifically configured computing device or machine. For example, in at least one embodiment, a computing device **10** may be configured or designed to function as a server system utilizing CPU **12**, local memory **11** and/or remote memory **16**, and interface(s) **15**. In at least one embodiment, CPU **12** may be caused to perform one or more of the different types of functions and/or operations under the control of software modules or components, which for example, may include an operating system and any appropriate applications software, drivers, and the like.

[071] CPU **12** may include one or more processors **13** such as, for example, a processor from one of the Intel, ARM, Qualcomm, and AMD families of microprocessors. In some

embodiments, processors 13 may include specially designed hardware such as application-specific integrated circuits (ASICs), electrically erasable programmable read-only memories (EEPROMs), field-programmable gate arrays (FPGAs), and so forth, for controlling operations of computing device 10. In a specific embodiment, a local memory 11 (such as non-volatile random access memory (RAM) and/or read-only memory (ROM), including for example one or more levels of cached memory) may also form part of CPU 12. However, there are many different ways in which memory may be coupled to system 10. Memory 11 may be used for a variety of purposes such as, for example, caching and/or storing data, programming instructions, and the like. It should be further appreciated that CPU 12 may be one of a variety of system-on-a-chip (SOC) type hardware that may include additional hardware such as memory or graphics processing chips, such as a QUALCOMM SNAPDRAGON™ or SAMSUNG EXYNOS™ CPU as are becoming increasingly common in the art, such as for use in mobile devices or integrated devices.

[072] As used herein, the term "processor" is not limited merely to those integrated circuits referred to in the art as a processor, a mobile processor, or a microprocessor, but broadly refers to a microcontroller, a microcomputer, a programmable logic controller, an application-specific integrated circuit, and any other programmable circuit.

[073] In one embodiment, interfaces 15 are provided as network interface cards (NICs). Generally, NICs control the sending and receiving of data packets over a computer network; other types of interfaces 15 may for example support other peripherals used with computing device 10. Among the interfaces that may be provided are Ethernet interfaces, frame relay interfaces, cable interfaces, DSL interfaces, token ring interfaces, graphics interfaces, and the like. In addition, various types of interfaces may be provided such as, for example, universal serial bus (USB), Serial, Ethernet, FIREWIRE™, THUNDERBOLT™, PCI, parallel, radio frequency (RF), BLUETOOTH™, near-field communications (e.g., using near-field magnetics), 802.11 (WiFi), frame relay, TCP/IP, ISDN, fast Ethernet interfaces, Gigabit Ethernet interfaces, Serial ATA (SATA) or external SATA (ESATA) interfaces, high-definition multimedia interface (HDMI), digital visual interface (DVI), analog or digital audio interfaces, asynchronous transfer

mode (ATM) interfaces, high-speed serial interface (HSSI) interfaces, Point of Sale (POS) interfaces, fiber data distributed interfaces (FDDIs), and the like. Generally, such interfaces 15 may include physical ports appropriate for communication with appropriate media. In some cases, they may also include an independent processor (such as a dedicated audio or video processor, as is common in the art for high-fidelity A/V hardware interfaces) and, in some instances, volatile and/or non-volatile memory (e.g., RAM).

[074] Although the system shown in **Fig. 12** illustrates one specific architecture for a computing device 10 for implementing one or more of the inventions described herein, it is by no means the only device architecture on which at least a portion of the features and techniques described herein may be implemented. For example, architectures having one or any number of processors 13 may be used, and such processors 13 may be present in a single device or distributed among any number of devices. In one embodiment, a single processor 13 handles communications as well as routing computations, while in other embodiments a separate dedicated communications processor may be provided. In various embodiments, different types of features or functionalities may be implemented in a system according to the invention that includes a client device (such as a tablet device or smartphone running client software) and server systems (such as a server system described in more detail below).

[075] Regardless of network device configuration, the system of the present invention may employ one or more memories or memory modules (such as, for example, remote memory block 16 and local memory 11) configured to store data, program instructions for the general-purpose network operations, or other information relating to the functionality of the embodiments described herein (or any combinations of the above). Program instructions may control execution of or comprise an operating system and/or one or more applications, for example. Memory 16 or memories 11, 16 may also be configured to store data structures, configuration data, encryption data, historical system operations information, or any other specific or generic non-program information described herein.

[076] Because such information and program instructions may be employed to implement one or more systems or methods described herein, at least some network device embodiments may

include nontransitory machine-readable storage media, which, for example, may be configured or designed to store program instructions, state information, and the like for performing various operations described herein. Examples of such nontransitory machine- readable storage media include, but are not limited to, magnetic media such as hard disks, floppy disks, and magnetic tape; optical media such as CD- ROM disks; magneto-optical media such as optical disks, and hardware devices that are specially configured to store and perform program instructions, such as read-only memory devices (ROM), flash memory (as is common in mobile devices and integrated systems), solid state drives (SSD) and "hybrid SSD" storage drives that may combine physical components of solid state and hard disk drives in a single hardware device (as are becoming increasingly common in the art with regard to personal computers), memristor memory, random access memory (RAM), and the like. It should be appreciated that such storage means may be integral and non-removable (such as RAM hardware modules that may be soldered onto a motherboard or otherwise integrated into an electronic device), or they may be removable such as swappable flash memory modules (such as "thumb drives" or other removable media designed for rapidly exchanging physical storage devices), "hot-swappable" hard disk drives or solid state drives, removable optical storage discs, or other such removable media, and that such integral and removable storage media may be utilized interchangeably. Examples of program instructions include both object code, such as may be produced by a compiler, machine code, such as may be produced by an assembler or a linker, byte code, such as may be generated by for example a JAVA™ compiler and may be executed using a Java virtual machine or equivalent, or files containing higher level code that may be executed by the computer using an interpreter (for example, scripts written in Python, Perl, Ruby, Groovy, or any other scripting language).

[077] In some embodiments, systems according to the present invention may be implemented on a standalone computing system. Referring now to **Fig. 13**, there is shown a block diagram depicting a typical exemplary architecture of one or more embodiments or components thereof on a standalone computing system. Computing device **20** includes processors **21** that may run software that carry out one or more functions or applications of embodiments of the invention, such as for example a client application **24**. Processors **21** may carry out computing instructions

under control of an operating system **22** such as, for example, a version of MICROSOFT WINDOWS™ operating system, APPLE OSX™ or iOS™ operating systems, some variety of the Linux operating system, ANDROID™ operating system, or the like. In many cases, one or more shared services **23** may be operable in system **20**, and may be useful for providing common services to client applications **24**. Services **23** may for example be WINDOWS™ services, user-space common services in a Linux environment, or any other type of common service architecture used with operating system **21**. Input devices **28** may be of any type suitable for receiving user input, including for example a keyboard, touchscreen, microphone (for example, for voice input), mouse, touchpad, trackball, or any combination thereof. Output devices **27** may be of any type suitable for providing output to one or more users, whether remote or local to system **20**, and may include for example one or more screens for visual output, speakers, printers, or any combination thereof. Memory **25** may be random-access memory having any structure and architecture known in the art, for use by processors **21**, for example to run software. Storage devices **26** may be any magnetic, optical, mechanical, memristor, or electrical storage device for storage of data in digital form (such as those described above, referring to **Fig. 12**). Examples of storage devices **26** include flash memory, magnetic hard drive, CD-ROM, and/or the like.

[078] In some embodiments, systems of the present invention may be implemented on a distributed computing network, such as one having any number of clients and/or servers. Referring now to **Fig. 14**, there is shown a block diagram depicting an exemplary architecture **30** for implementing at least a portion of a system according to an embodiment of the invention on a distributed computing network. According to the embodiment, any number of clients **33** may be provided. Each client **33** may run software for implementing client-side portions of the present invention; clients may comprise a system **20** such as that illustrated in **Fig. 13**. In addition, any number of servers **32** may be provided for handling requests received from one or more clients **33**. Clients **33** and servers **32** may communicate with one another via one or more electronic networks **31**, which may be in various embodiments any of the Internet, a wide area network, a mobile telephony network (such as CDMA or GSM cellular networks), a wireless network (such as WiFi, WiMAX, LTE, and so forth), or a local area network (or indeed any network topology

known in the art; the invention does not prefer any one network topology over any other). Networks 31 may be implemented using any known network protocols, including for example wired and/or wireless protocols.

[079] In addition, in some embodiments, servers 32 may call external services 37 when needed to obtain additional information, or to refer to additional data concerning a particular call. Communications with external services 37 may take place, for example, via one or more networks 31. In various embodiments, external services 37 may comprise web-enabled services or functionality related to or installed on the hardware device itself. For example, in an embodiment where client applications 24 are implemented on a smartphone or other electronic device, client applications 24 may obtain information stored in a server system 32 in the cloud or on an external service 37 deployed on one or more of a particular enterprise's or user's premises.

[080] In some embodiments of the invention, clients 33 or servers 32 (or both) may make use of one or more specialized services or appliances that may be deployed locally or remotely across one or more networks 31. For example, one or more databases 34 may be used or referred to by one or more embodiments of the invention. It should be understood by one having ordinary skill in the art that databases 34 may be arranged in a wide variety of architectures and using a wide variety of data access and manipulation means. For example, in various embodiments one or more databases 34 may comprise a relational database system using a structured query language (SQL), while others may comprise an alternative data storage technology such as those referred to in the art as "NoSQL" (for example, HADOOP CASSANDRA™, GOOGLE BIGTABLE™, and so forth). In some embodiments, variant database architectures such as column-oriented databases, in-memory databases, clustered databases, distributed databases, or even flat file data repositories may be used according to the invention. It will be appreciated by one having ordinary skill in the art that any combination of known or future database technologies may be used as appropriate, unless a specific database technology or a specific arrangement of components is specified for a particular embodiment herein. Moreover, it should be appreciated that the term "database" as used herein may refer to a physical database machine, a cluster of machines acting as a single database system, or a

logical database within an overall database management system. Unless a specific meaning is specified for a given use of the term "database", it should be construed to mean any of these senses of the word, all of which are understood as a plain meaning of the term "database" by those having ordinary skill in the art.

[081] Similarly, most embodiments of the invention may make use of one or more security systems 36 and configuration systems 35. Security and configuration management are common information technology (IT) and web functions, and some amount of each are generally associated with any IT or web systems. It should be understood by one having ordinary skill in the art that any configuration or security subsystems known in the art now or in the future may be used in conjunction with embodiments of the invention without limitation, unless a specific security 36 or configuration system 35 or approach is specifically required by the description of any specific embodiment.

[082] Fig. 15 shows an exemplary overview of a computer system 40 as may be used in any of the various locations throughout the system. It is exemplary of any computer that may execute code to process data. Various modifications and changes may be made to computer system 40 without departing from the broader scope of the system and method disclosed herein. Central processor unit (CPU) 41 is connected to bus 42, to which bus is also connected memory 43, nonvolatile memory 44, display 47, input/output (I/O) unit 48, and network interface card (NIC) 53. I/O unit 48 may, typically, be connected to keyboard 49, pointing device 50, hard disk 52, and real-time clock 51. NIC 53 connects to network 54, which may be the Internet or a local network, which local network may or may not have connections to the Internet. Also shown as part of system 40 is power supply unit 45 connected, in this example, to a main alternating current (AC) supply 46. Not shown are batteries that could be present, and many other devices and modifications that are well known but are not applicable to the specific novel functions of the current system and method disclosed herein. It should be appreciated that some or all components illustrated may be combined, such as in various integrated applications, for example Qualcomm or Samsung system-on-a-chip (SOC) devices, or whenever it may be appropriate to combine multiple capabilities or functions into a single hardware device (for instance, in mobile

devices such as smartphones, video game consoles, in-vehicle computer systems such as navigation or multimedia systems in automobiles, or other integrated hardware devices).

[083] In various embodiments, functionality for implementing systems or methods of the present invention may be distributed among any number of client and/or server components. For example, various software modules may be implemented for performing various functions in connection with the present invention, and such modules may be variously implemented to run on server and/or client components.

[084] The skilled person will be aware of a range of possible modifications of the various embodiments described above. Accordingly, the present invention is defined by the claims and their equivalents.

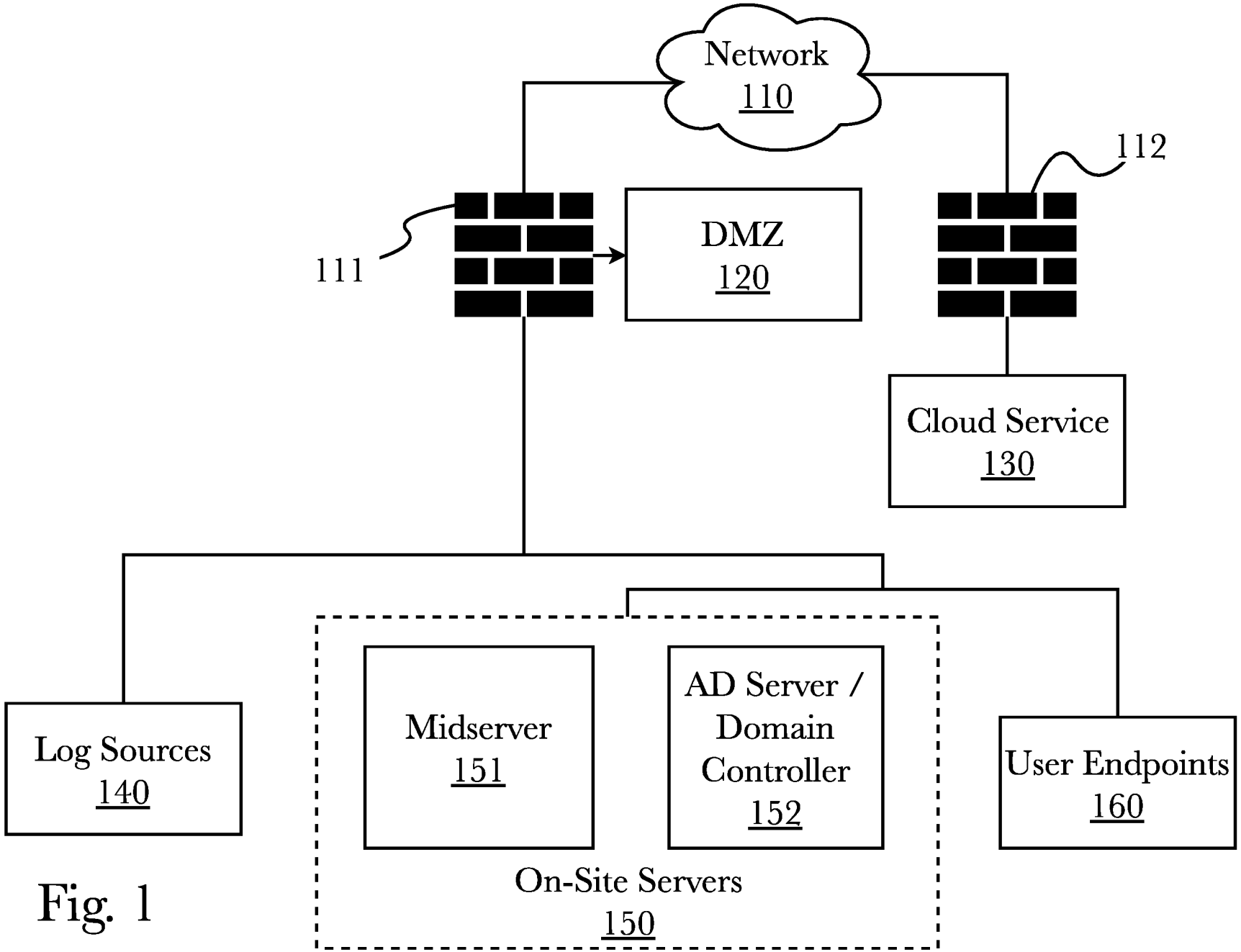


Fig. 1

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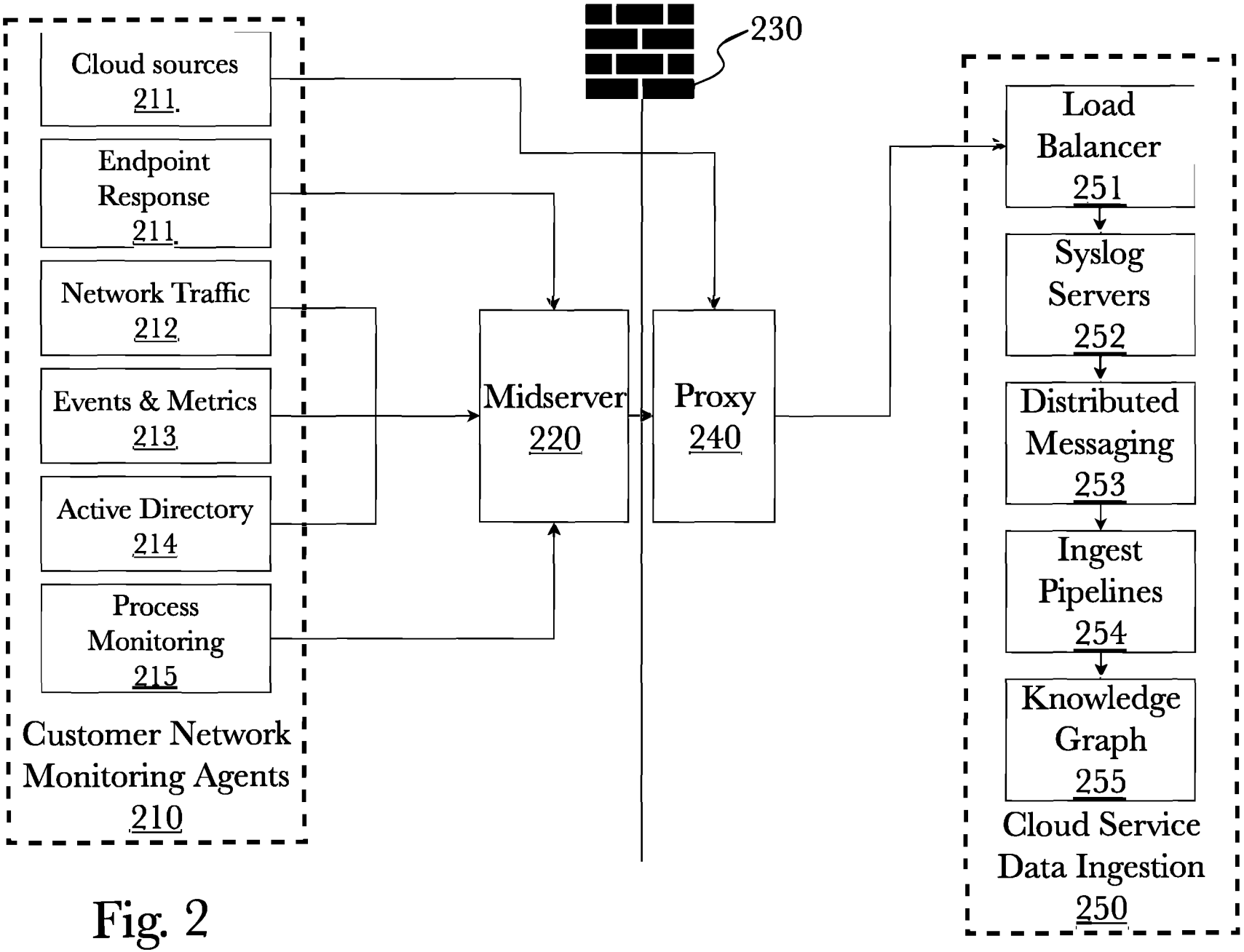

Cloud sources
211
Endpoint
Response
211
Network Traffic
212
Events & Metrics
213
Active Directory
214
Process
Monitoring
215
Customer Network
Monitoring Agents
210
230
Midserver
220
Proxy
240
Load
Balancer
251
Syslog
Servers
252
Distributed
Messaging
253
Ingest
Pipelines
254
Knowledge
Graph
255
Cloud Service
Data Ingestion
250

Fig. 2

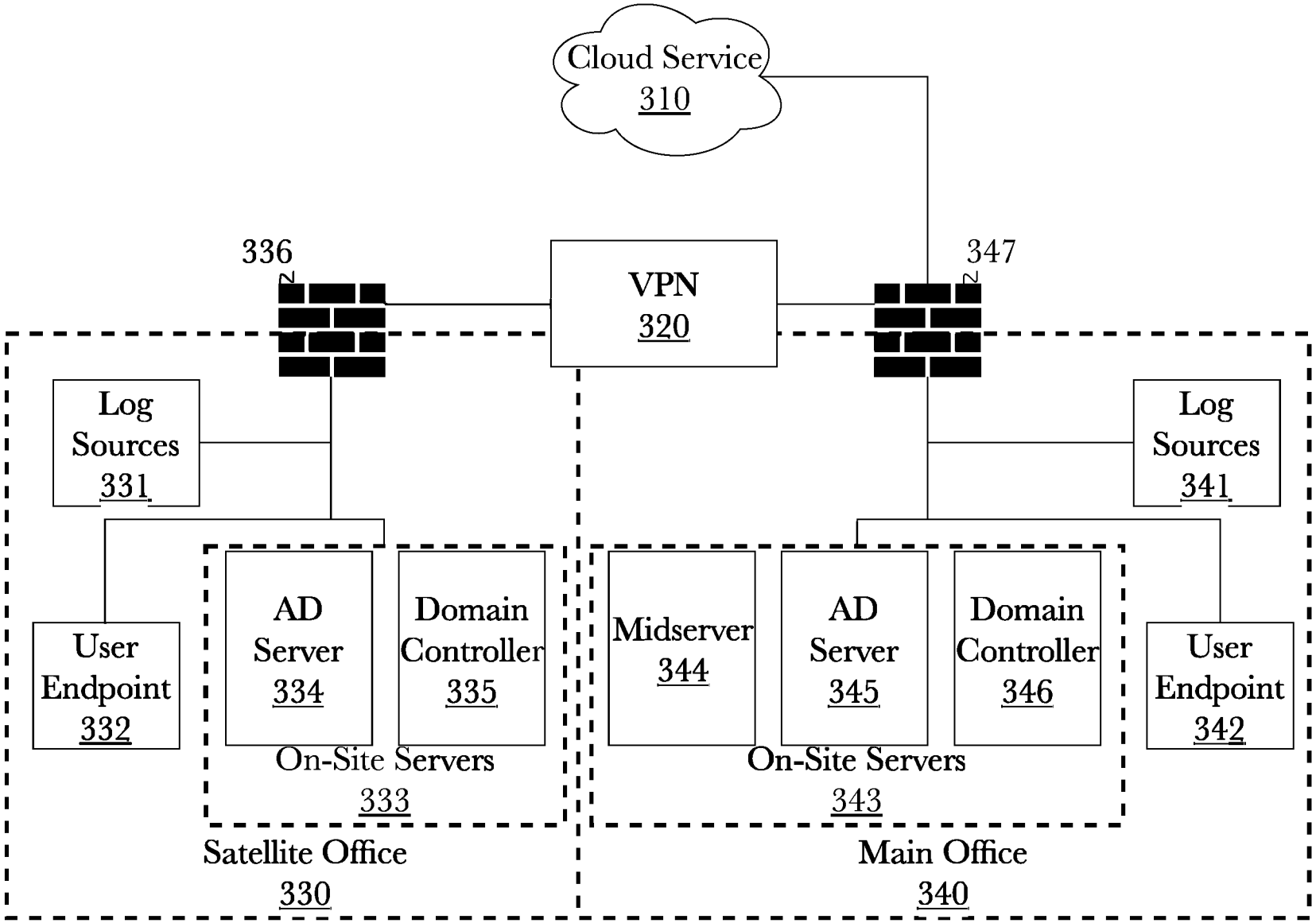


Fig. 3

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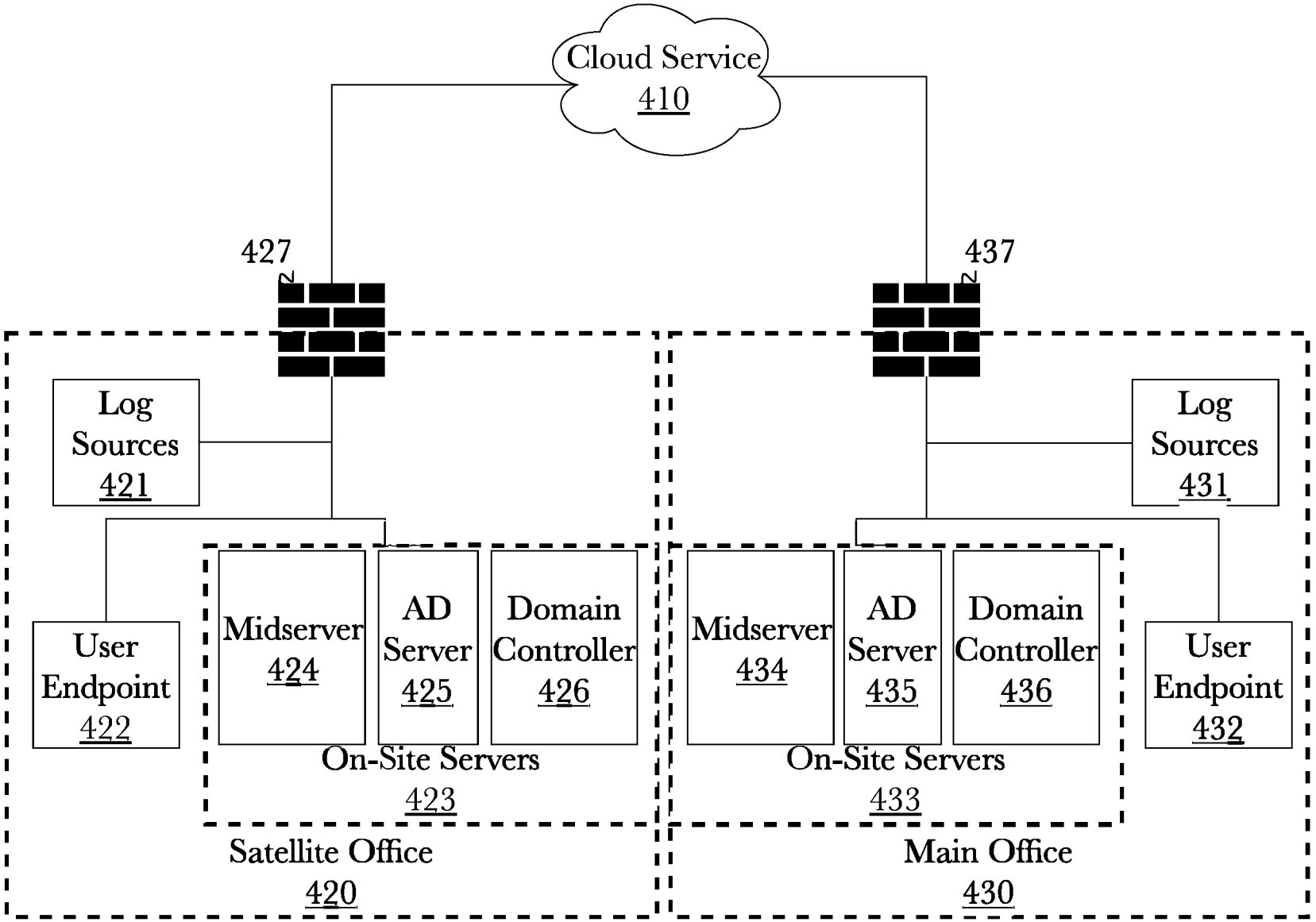


Fig. 4

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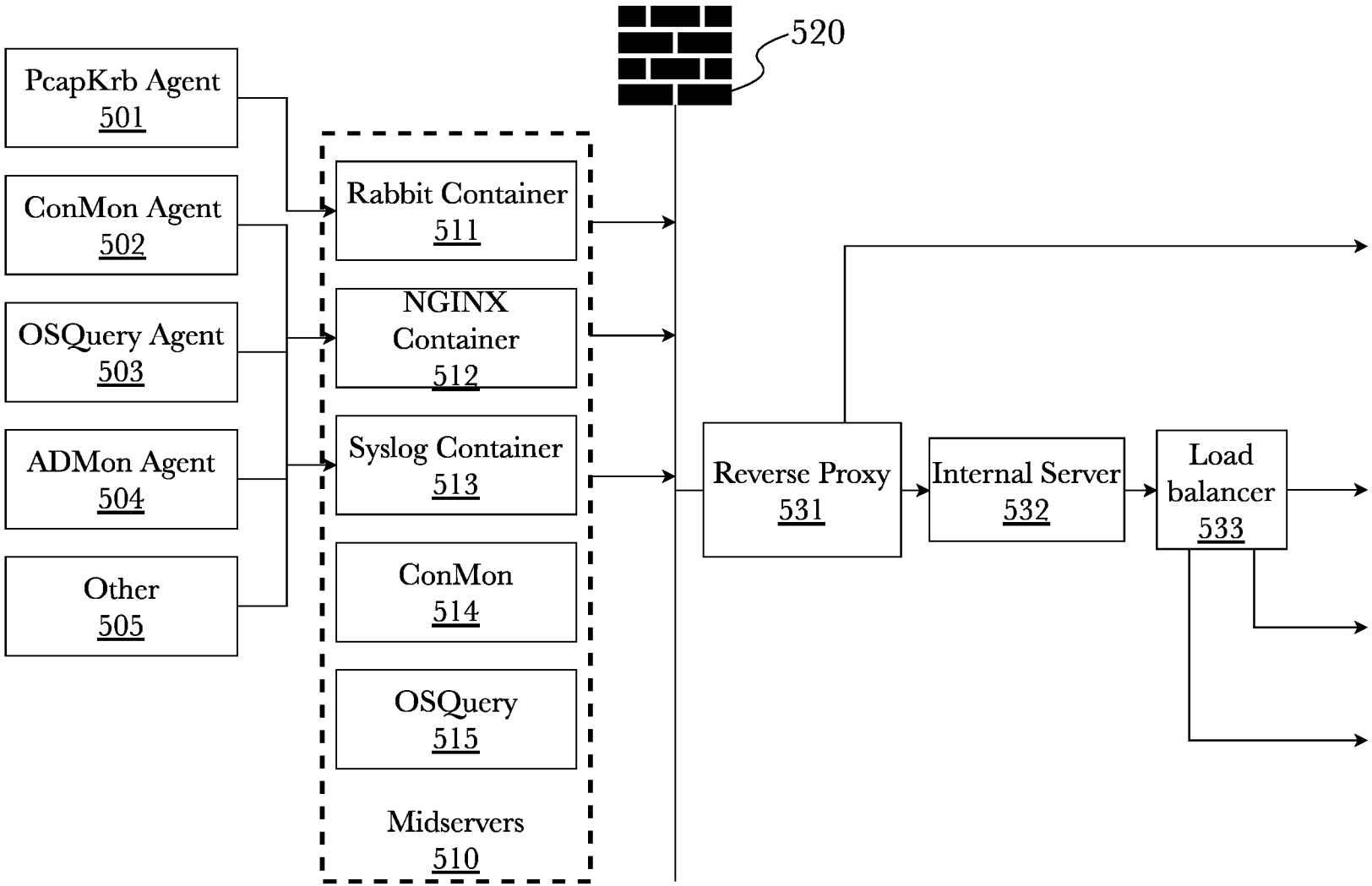


Fig. 5A

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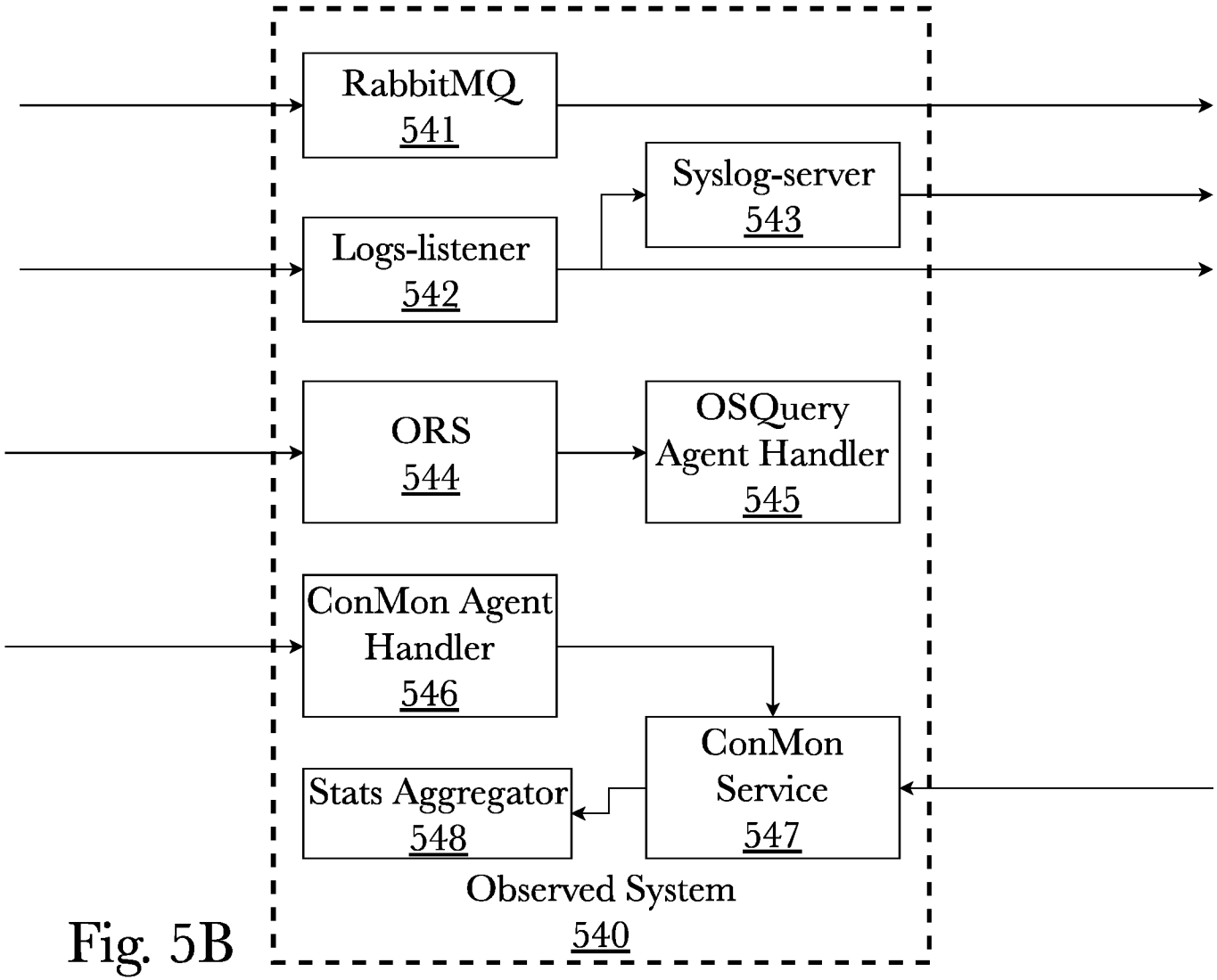


Fig. 5B

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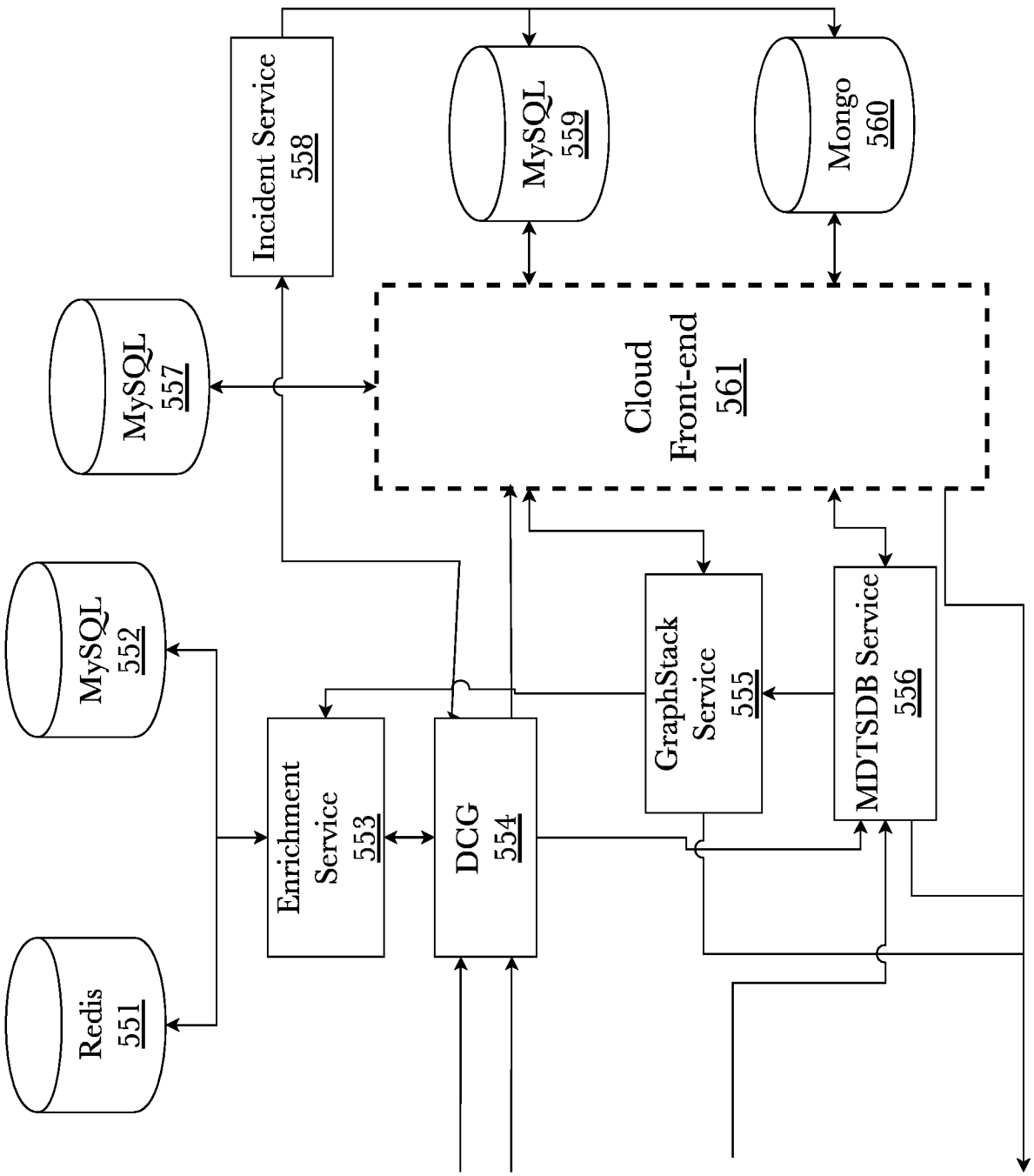

Redis
551
MySQL
552
MySQL
557
Enrichment
Service
553
DCG
554
GraphStack
Service
555
MDTSDB Service
556
Incident Service
558
MySQL
559
Mongo
560
Cloud
Front-end
561

Fig. 5C

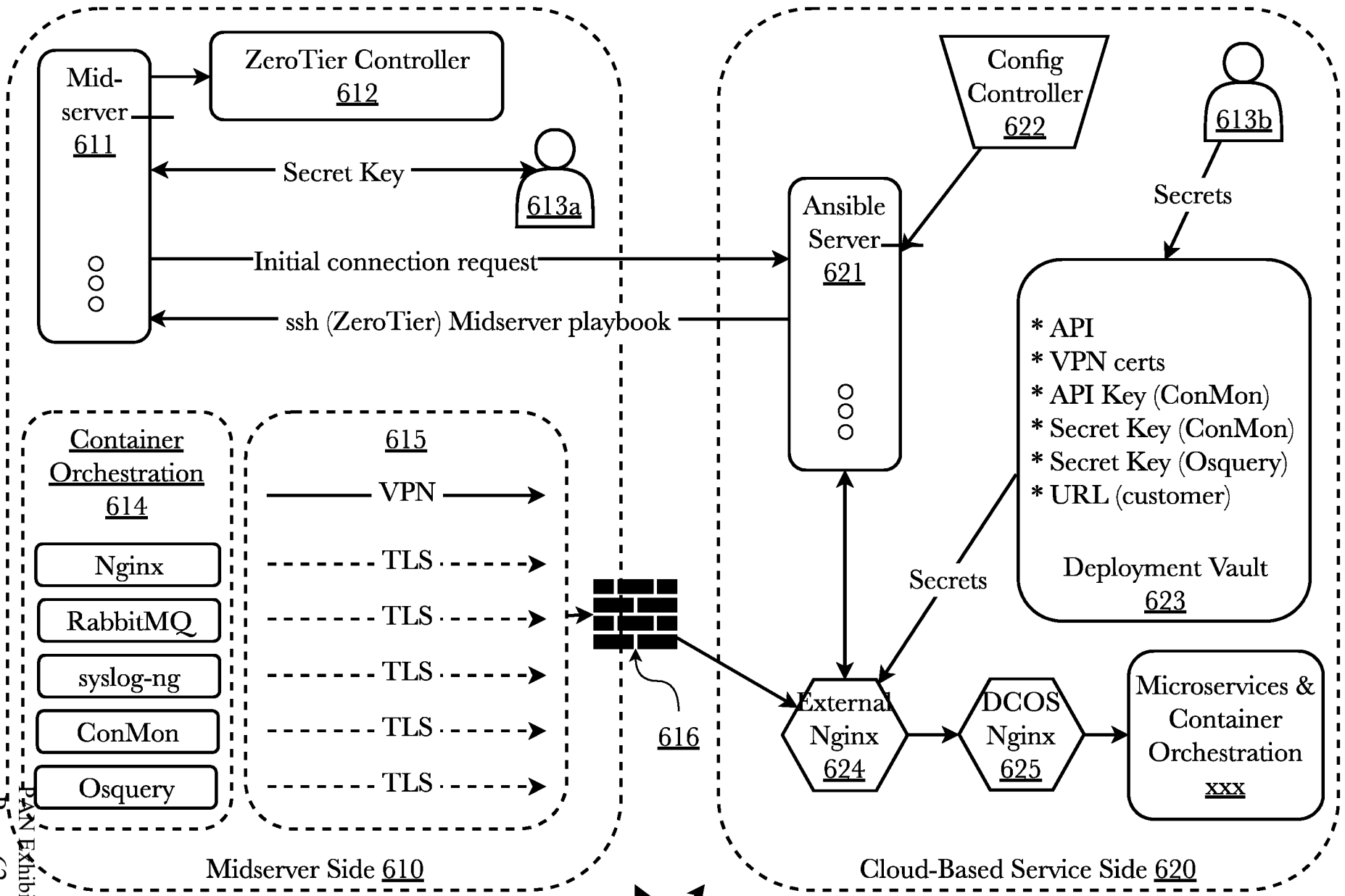


Fig. 6

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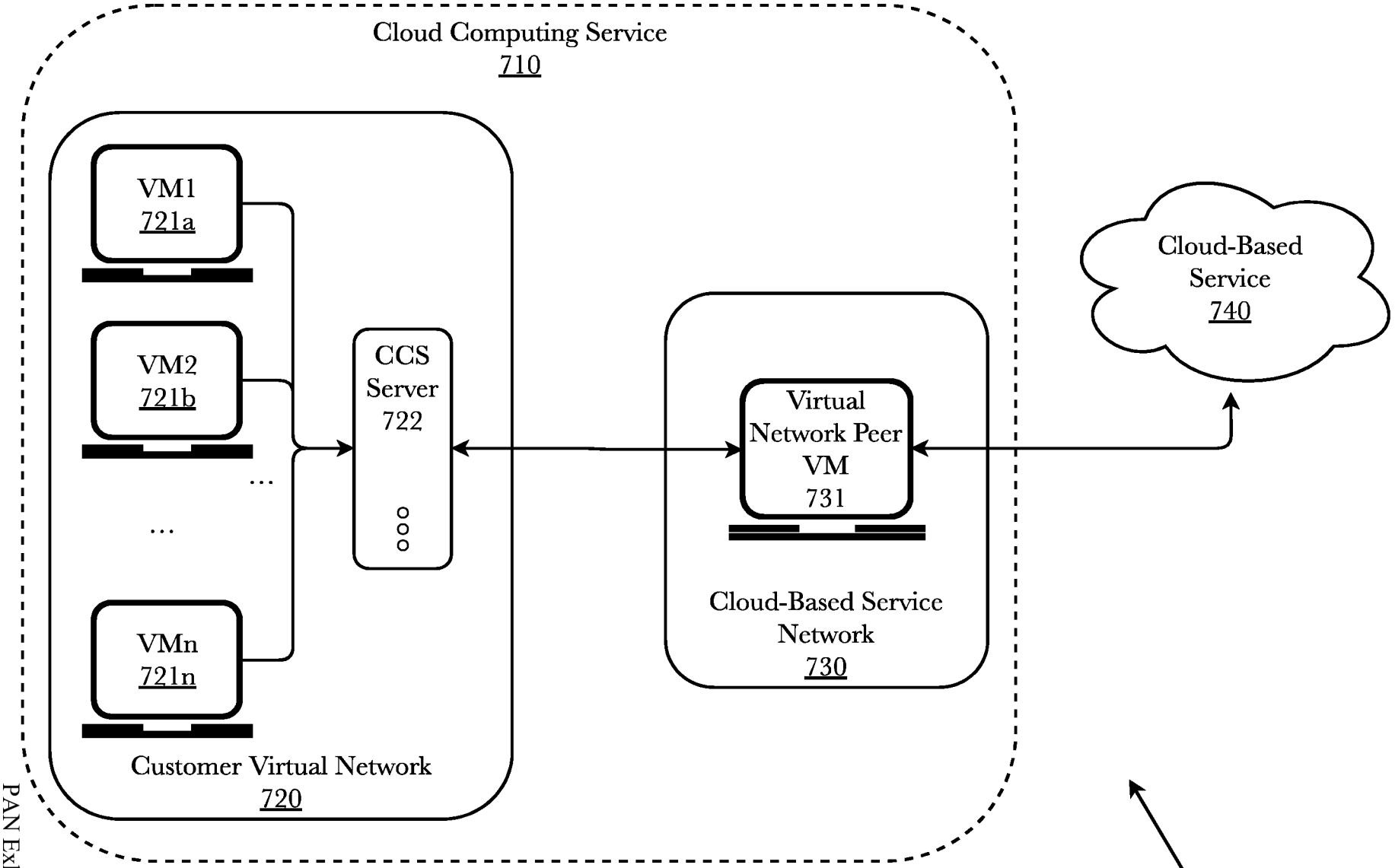


Fig. 7

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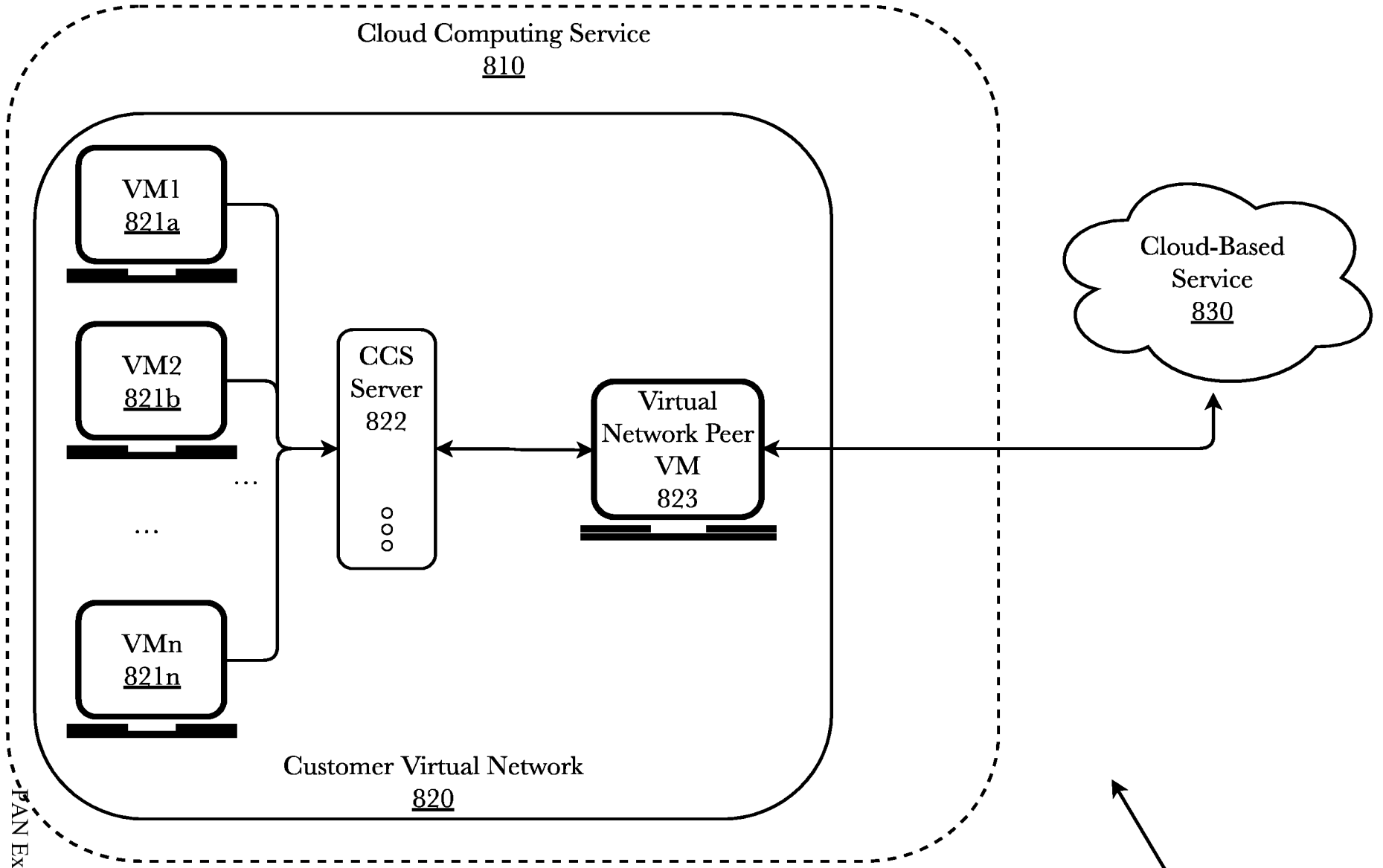


Fig. 8

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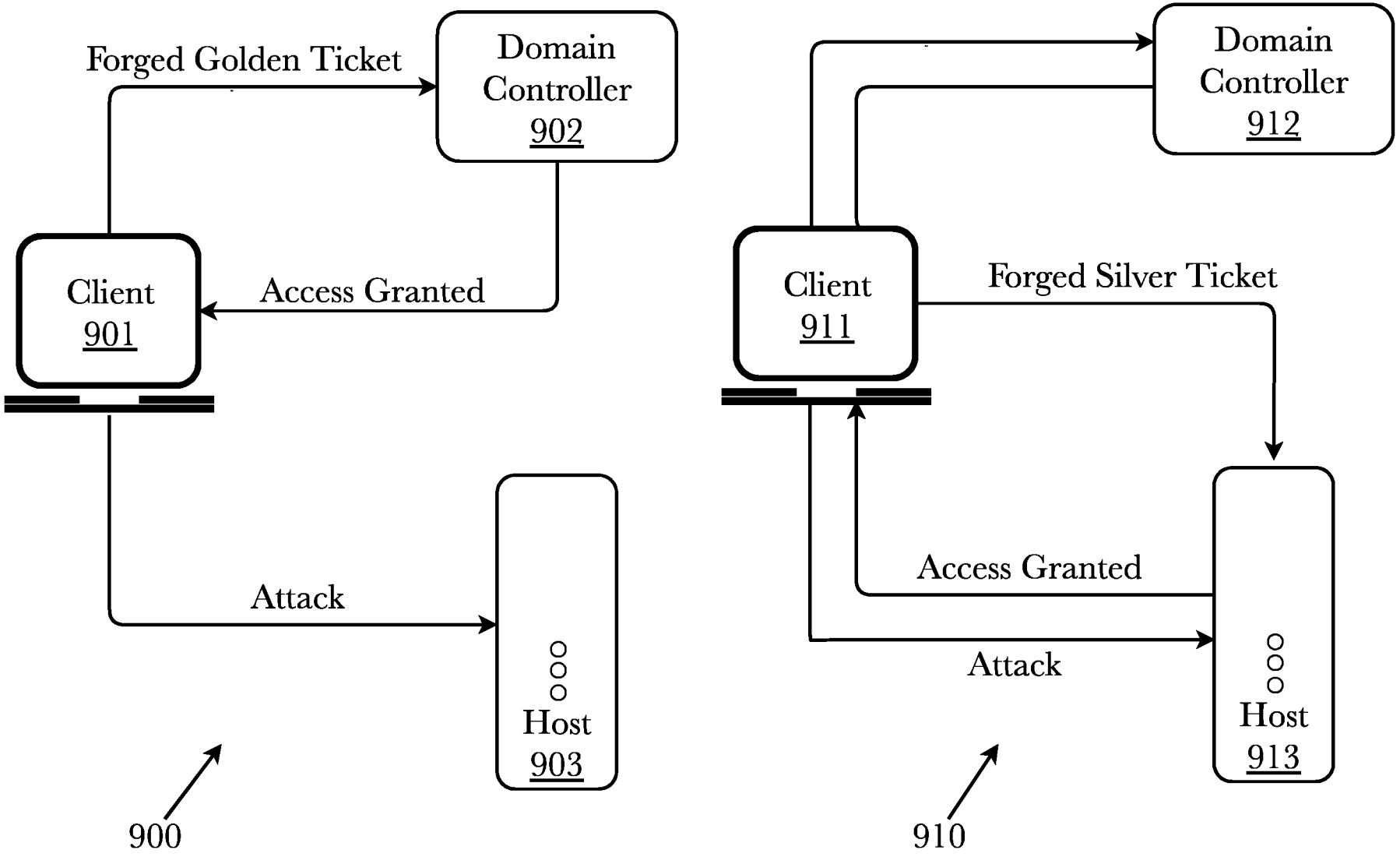


Fig. 9

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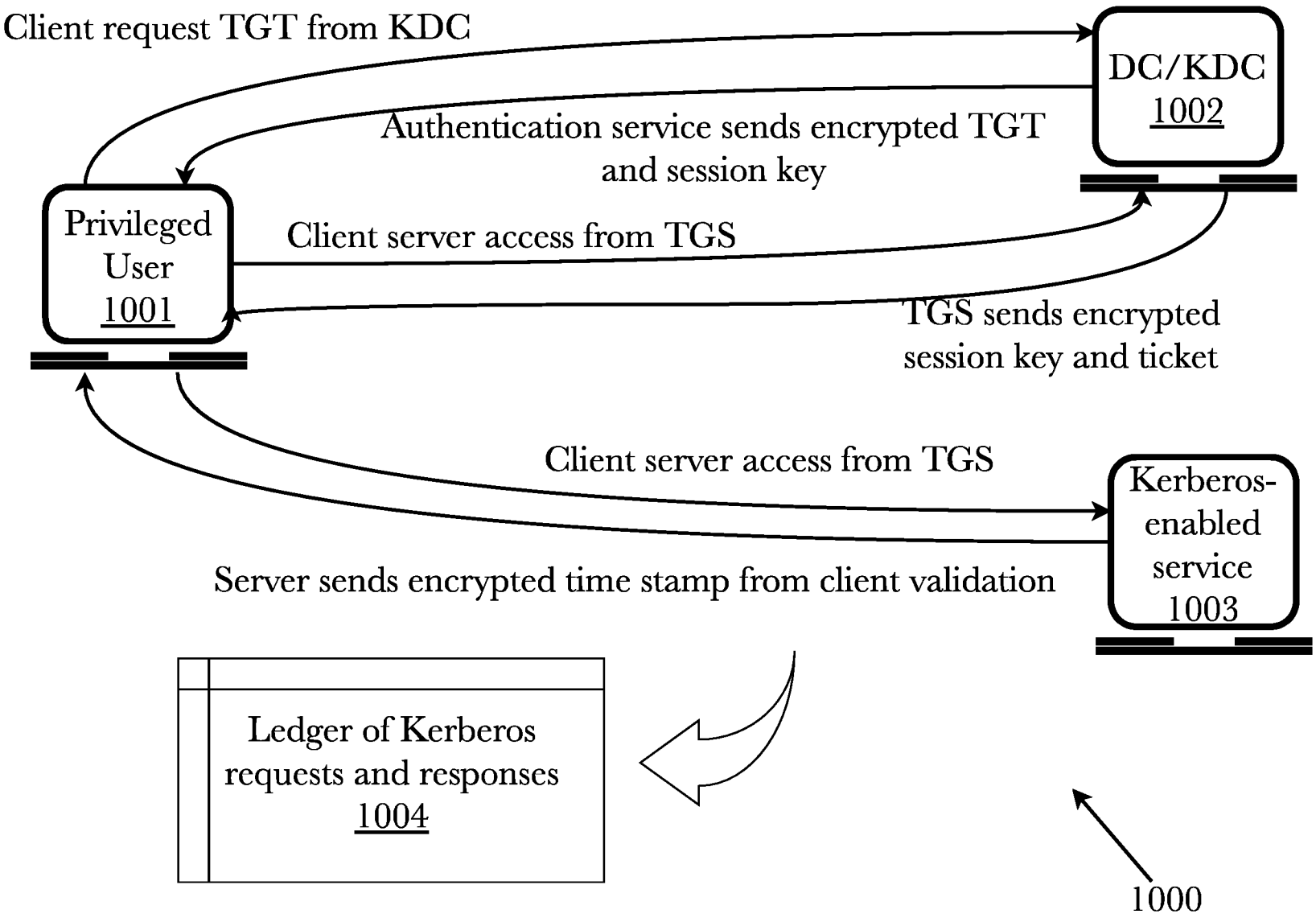


Fig. 10

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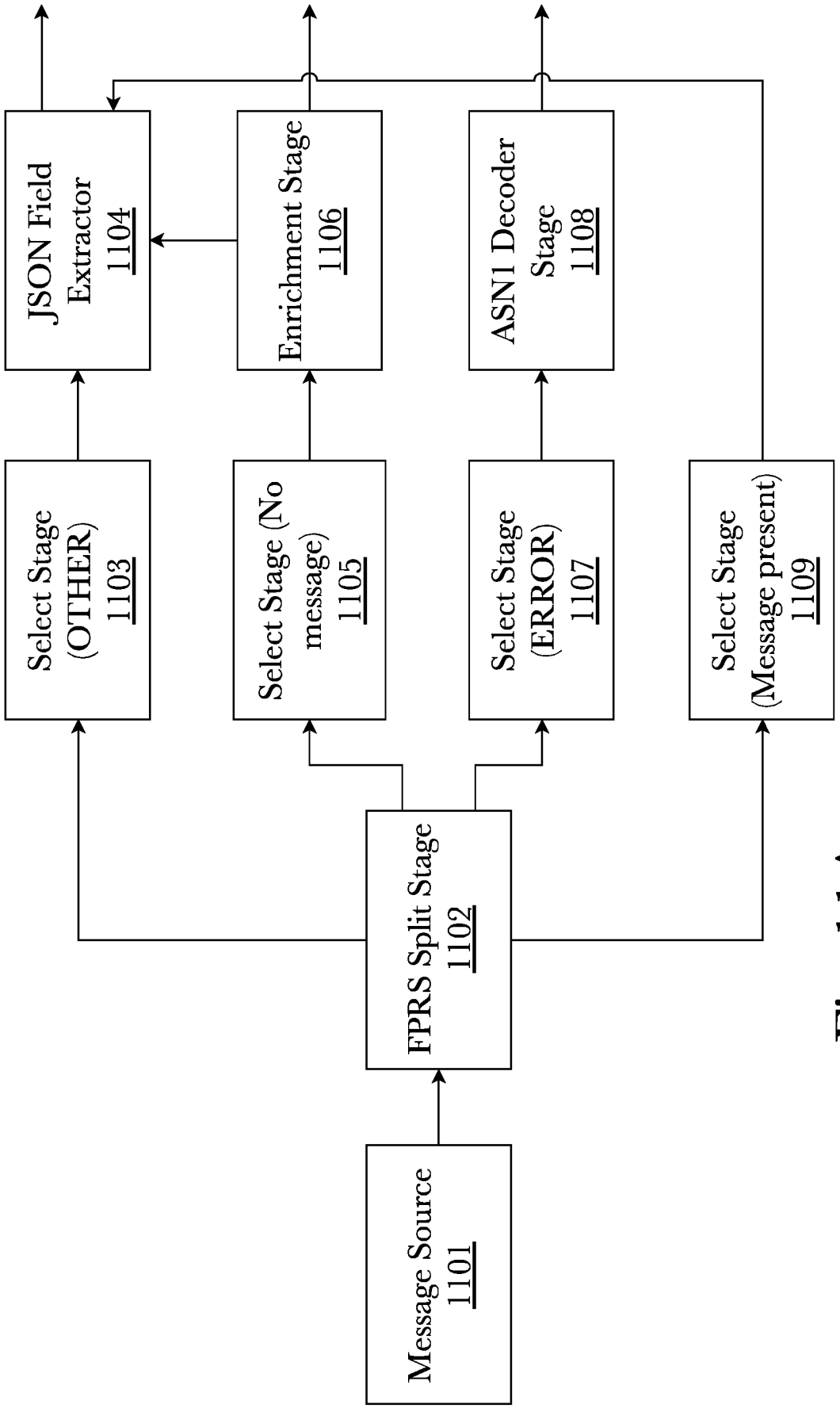

Message Source
1101
FPRS Split Stage
1102
Select Stage
(OTHER)
1103
Select Stage (No
message)
1105
Select Stage
(ERROR)
1107
Select Stage
(Message present)
1109
JSON Field
Extractor
1104
Enrichment Stage
1106
ASN1 Decoder
Stage
1108

Fig. 11A

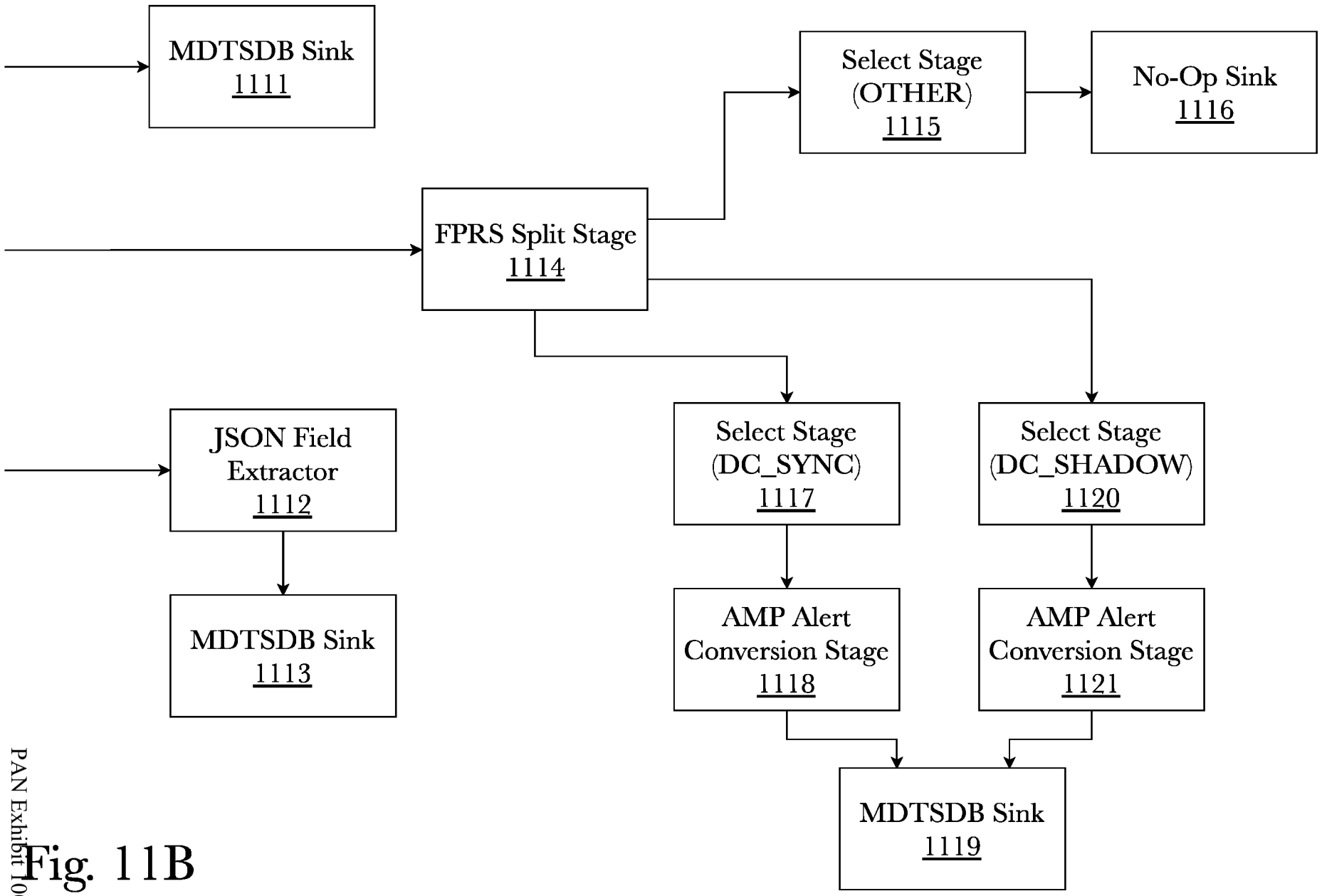


Fig. 11B

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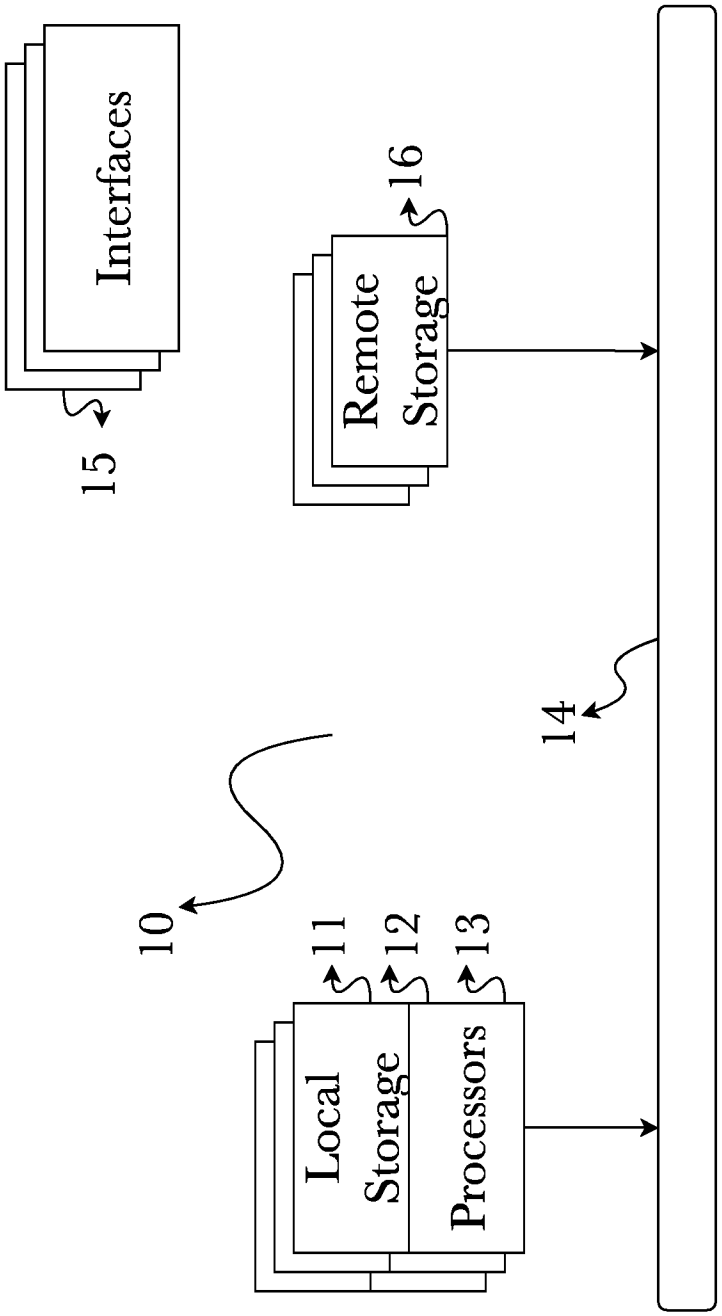

Interfaces
15
Remote Storage
16
14
10
Local Storage
11
12
Processors
13

Fig. 12

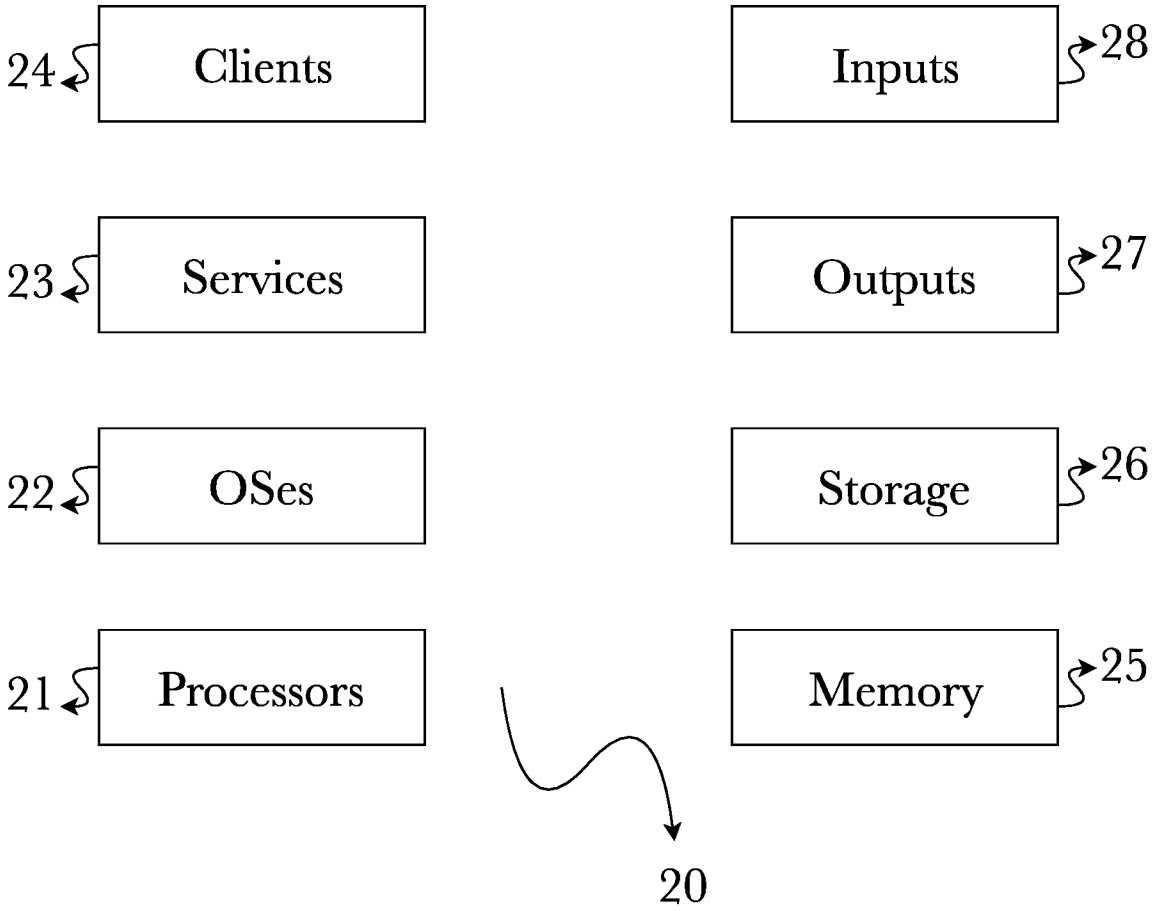


Fig. 13

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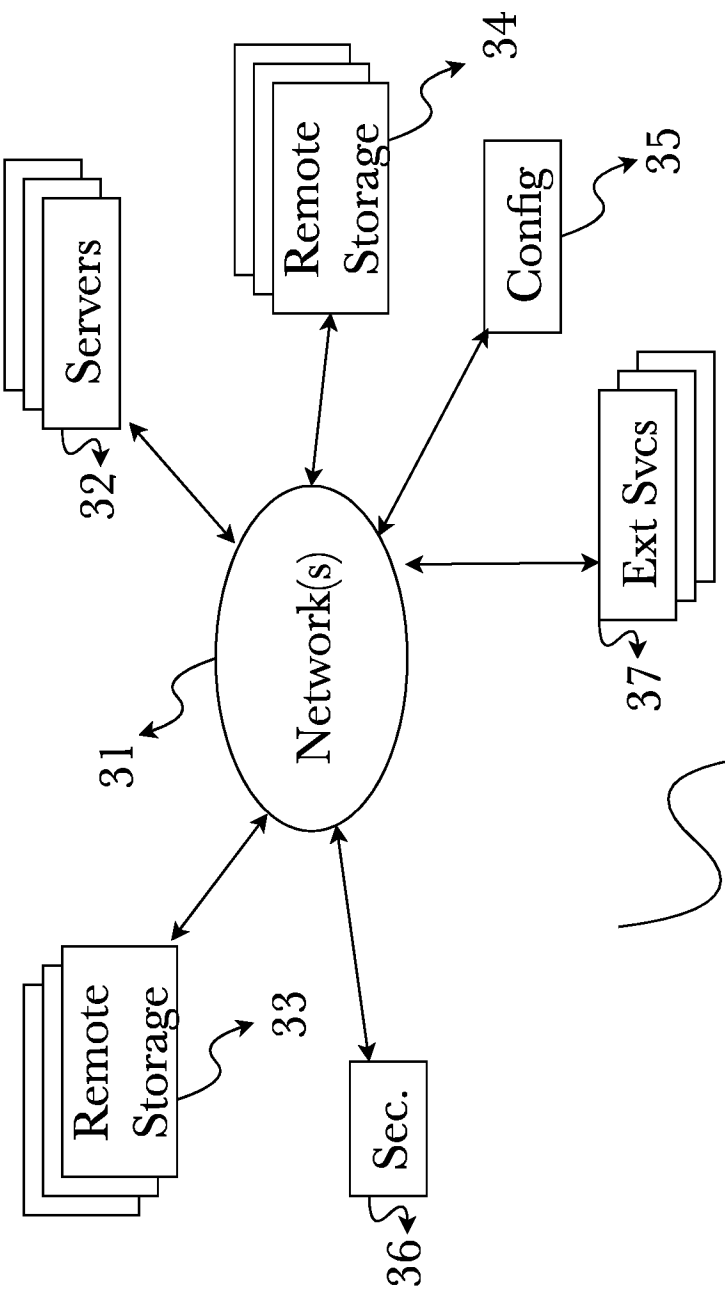

Servers
32
Remote Storage
34
Config
35
Network(s)
31
Ext Svcs
37
30
Remote Storage
33
Sec.
36

Fig. 14

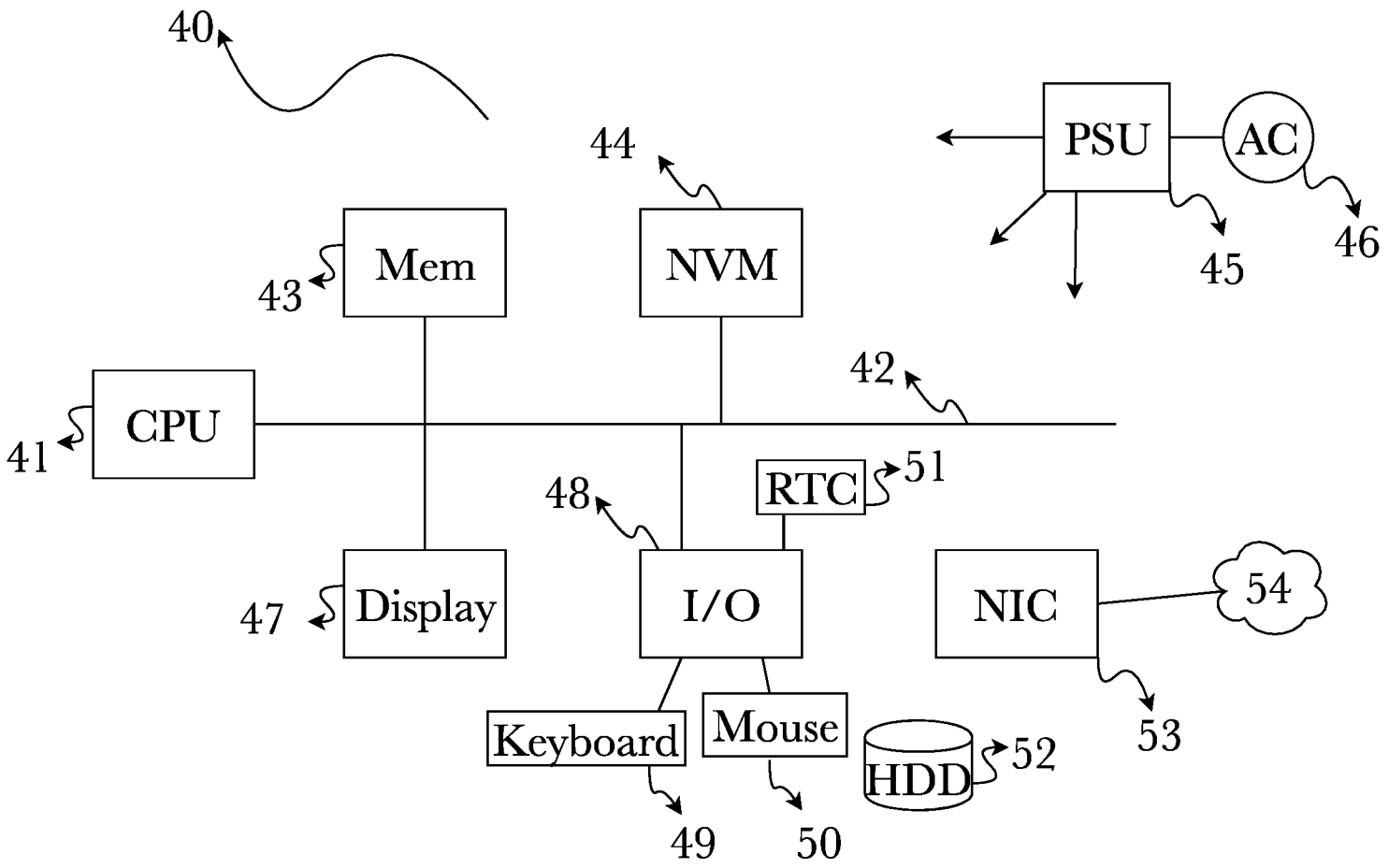


Fig. 15

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
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OC000000108597205

Date Mailed: 06/03/2019

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Power of Attorney: The patent practitioners associated with Customer Number 82318

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This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017

which is a CIP of 15/376,657 12/13/2016
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
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which is a CIP of 15/186,453 06/18/2016
which is a CIP of 15/166,158 05/26/2016
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which is a CIP of 14/925,974 10/28/2015
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017
which is a CIP of 15/343,209 11/04/2016
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
and is a CIP of 15/229,476 08/05/2016
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This application 16/412,340
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which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/673,368 08/09/2017
which is a CIP of 15/376,657 12/13/2016
This application 16/412,340
is a CIP of 16/248,893 01/16/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,312 12/07/2017
which is a CIP of 15/186,453 06/18/2016
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
and said 16/248,893 01/16/2019
is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,436 12/07/2017
which is a CIP of 15/790,457 10/23/2017
which claims benefit of 62/568,298 10/04/2017
and is a CIP of 15/790,327 10/23/2017
which claims benefit of 62/568,291 10/04/2017
and is a CIP of 15/616,427 06/07/2017
and is a CIP of 15/141,752 04/28/2016

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.

If Required, Foreign Filing License Granted: 05/31/2019
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/412,340**
Projected Publication Date: To Be Determined - pending completion of Missing Parts
Non-Publication Request: No
Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

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.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 16/412,340

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	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	10 minus 20 =	*	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	6 minus 3 =	* 3	x 230 =	690			
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	1475		TOTAL	

APPLICATION AS AMENDED - PART II

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

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

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/412,340	05/14/2019	Mike Chasman	15026

CONFIRMATION NO. 7063

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
SILVERDALE, WA 98383

FORMALITIES LETTER

OC000000108597206

Date Mailed: 06/03/2019

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
- The application search fee must be submitted.
- The application examination fee must be submitted.
- Additional claim fees of $ **690** as a small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.
- Surcharge as set forth in 37 CFR 1.16(f) must be submitted.
  The surcharge is due for any one of:
  - late submission of the basic filing fee, search fee, or examination fee,
  - late submission of inventor's oath or declaration,
  - filing an application that does not contain at least one claim on filing, or
  - submission of an application filed by reference to a previously filed application.

SUMMARY OF FEES DUE:

The fee(s) required within **TWO MONTHS** from the date of this Notice to avoid abandonment is/are itemized below. Small entity discount is in effect. If applicant is qualified for micro entity status, an acceptable Certification of Micro Entity Status must be submitted to establish micro entity status. (See 37 CFR 1.29 and forms PTO/SB/15A and 15B.)

- $ **75** basic filing fee.
- $ **80** surcharge.
- $ **330** search fee.
- $ **380** examination fee.
- $ **690** for **3** independent claims over 3.

- $(**0**) previous unapplied payment amount.
- $ **1555** TOTAL FEE BALANCE DUE.

Items Required To Avoid Processing Delays:

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
  Mike Chasman
  Jeffrey Chung
  Jason Crabtree
  Luka Jurukovski
  Rich Kelley
  Andre Ludwig
  Artem Panasenkov
  Andrew Sellers

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web, including a copy of this Notice and selecting the document description "Applicant response to Pre-Exam Formalities Notice". https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at 1-866-217-9197 or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

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**.

/tle/

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Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
SILVERDALE, WA 98383

Courtesy Reminder for Application Serial No: 16/412,340

Attorney Docket No: 15026
Customer Number: 82318
Date of Electronic Notification: 06/03/2019

This is a courtesy reminder that new correspondence is available for this application. If you have not done so already, please review the correspondence. The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

An email notification regarding the correspondence was sent to the following email address(es) associated with your customer number:
USPTO@GALVINPATENTLAW.COM

To view your correspondence online or update your email addresses, please visit us anytime at **https://ppair-my.uspto.gov/pair/PrivatePair.**
If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov or call 1-866-217-9197.

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Jason Crabtree
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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	20080027690	A1	2008-01-31	WATTS, PHILIP	
	2	20150186427	A1	2015-07-02	LOGOTHETIS, DIONYSIOS et al.	
	3	20120116743	A1	2015-05-10	AYALA, RICHARD et al.	
	4	20160164905	A1	2016-06-09	PHINNEY WOOD, CHRISTOPHER PAUL et al.	

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]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16412340
	Filing Date	2019-05-14
	First Named Inventor	Jason Crabtree
	Art Unit	2447
	Examiner Name	-
	Attorney Docket Number	15026

	1						

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

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

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EXAMINER SIGNATURE

Examiner Signature		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	16412340
	Filing Date	2019-05-14
	First Named Inventor	Jason Crabtree
	Art Unit	2447
	Examiner Name	-
	Attorney Docket Number	15026

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	/Brian S. Boon/	Date (YYYY-MM-DD)	2019-07-03
Name/Print	Brian S. Boon	Registration Number	77,640

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.

Electronic Acknowledgement Receipt

EFS ID:	36501007
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Melanie Ryder
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	03-JUL-2019
Filing Date:	14-MAY-2019
Time Stamp:	22:49:20
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	Information Disclosure Statement (IDS) Form (SB08)	190703_15026_IDS_AS-FILED.pdf	1035200 6e558c6d34750afd2064f7b673819656dcd269a9	no	4

Warnings:

Information:	
Total Files Size (in bytes):	1035200

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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	20080027690	A1	2008-01-31	WATTS, PHILIP	
	2	20150186427	A1	2015-07-02	LOGOTHETIS, DIONYSIOS et al.	
	3	20120116743	A1	2015-05-10	AYALA, RICHARD et al.	
	4	20160164905	A1	2016-06-09	PHINNEY WOOD, CHRISTOPHER PAUL et al.	

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]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16412340
	Filing Date	2019-05-14
	First Named Inventor	Mike Chasman
	Art Unit	2447
	Examiner Name	-
	Attorney Docket Number	15026

	1						

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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[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	16412340
	Filing Date	2019-05-14
	First Named Inventor	Mike Chasman
	Art Unit	2447
	Examiner Name	-
	Attorney Docket Number	15026

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	/Brian S. Boon/	Date (YYYY-MM-DD)	2019-07-03
Name/Print	Brian S. Boon	Registration Number	77,640

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

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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.

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

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

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

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	36501028
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Melanie Ryder
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	03-JUL-2019
Filing Date:	14-MAY-2019
Time Stamp:	22:57:51
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	Information Disclosure Statement (IDS) Form (SB08)	190703_15026_IDS_AS-FILED.pdf	1035208 28caab7a19b7bffedfdf274398a78937ca6dd208	no	4

Warnings:

Information:	
Total Files Size (in bytes):	1035208

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New Applications Under 35 U.S.C. 111

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

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

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New International Application Filed with the USPTO as a Receiving Office

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PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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	7072863	B1	2006-07-04	PHILIPS, G. Michael et al.	

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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	20110208681	A1	2011-08-25	KUECUEKYAN, Horen	
	2	20160092557	A1	2016-03-31	STOJANOVIC, Alexander Sasha et al.	
	3	20070021955	A1	2007-01-25	TOLONE, William J. et al.	
	4	20070043656	A1	2007-02-22	LANCASTER, Clifton J.	
	5	20080221949	A1	2008-09-11	DELURGIO, Philip D. et al.	

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FOREIGN PATENT DOCUMENTS Remove

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16412340
	Filing Date	2019-05-14
	First Named Inventor	Mike Chasman
	Art Unit	2447
	Examiner Name	-
	Attorney Docket Number	15026

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							

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	Application Number	16412340
	Filing Date	2019-05-14
	First Named Inventor	Mike Chasman
	Art Unit	2447
	Examiner Name	-
	Attorney Docket Number	15026

CERTIFICATION STATEMENT

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OR

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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	/Brian S. Boon/	Date (YYYY-MM-DD)	2019-07-08
Name/Print	Brian S. Boon	Registration Number	77640

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

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Electronic Acknowledgement Receipt

EFS ID:	36527524
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Alexandria Wright
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	09-JUL-2019
Filing Date:	14-MAY-2019
Time Stamp:	11:42:07
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	190709_15026_IDS_AS-FILED.pdf	1035270 0f41415cce8d0568e16caa12cf7342cbaf6af5aa	no	4

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Total Files Size (in bytes):	1035270

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New Applications Under 35 U.S.C. 111

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

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New International Application Filed with the USPTO as a Receiving Office

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PTO/SB/08a (03-15)
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(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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	5669000	A	1997-09-16	JESSEN, Jay Alan et al.	

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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	20150169294	A1	2015-06-18	BROCK, Bishop C. et al.	
	2	20120266244	A1	2012-10-18	GREEN, Jonathon Patrick et al.	
	3	20160364307	A1	2016-12-15	GARG, Vibhav et al.	
	4	20150149979	A1	2015-05-28	TALBY, David et al.	
	5	20170323089	A1	2017-11-09	DUGGAL, Dave M. et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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	105302532	CN	B	2018-06-29	CHANGMING, FU		

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NON-PATENT LITERATURE DOCUMENTS Remove

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]
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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

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	Application Number	16412340
	Filing Date	2019-05-14
	First Named Inventor	Mike Chasman
	Art Unit	2447
	Examiner Name	-
	Attorney Docket Number	15026

CERTIFICATION STATEMENT

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OR

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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	/Brian S. Boon/	Date (YYYY-MM-DD)	2019-07-09
Name/Print	Brian S. Boon	Registration Number	77640

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

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Electronic Acknowledgement Receipt

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First Named Inventor/Applicant Name:	Mike Chasman
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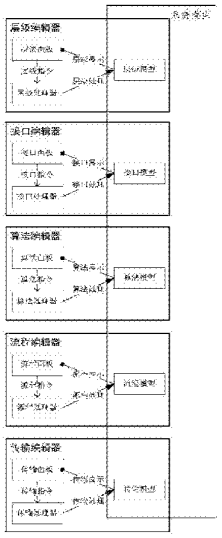
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(54)发明名称

一种构造系统模型的可视建模编辑器

(57)摘要

本发明公开了一种基于系统元模型构造系统模型的可视建模编辑器，以层级编辑器、接口编辑器、算法编辑器、流程编辑器、传输编辑器分别以层级模型、接口模型、算法模型、流程模型、传输模型及对应视图为编辑对象完成系统模型及系统视图的编辑，为各种领域提供了一种具有运算性、通用性、易用性的优点的可视系统建模工具：本发明构造的系统模型及系统视图结构清晰，层次可调，建模粒度可控，具有可被运算的充分一致性；方法统一，既方便自顶向下分析设计，也方便自底向上实现集成，适用于各种系统包括各种应用环境的软件系统及信息系统建模；建模方法简单，完全可视化建模，即使普通领域人员，也能独立轻松编辑系统模型及系统视图。



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1.一种构造系统模型的可视建模编辑器，基于一个含有计算机可读程序代码的计算机可读存储介质，所述计算机可读程序代码包含一组可以被计算机的处理器所执行的指令，通过基于系统元视图的系统视图对一个由系统元模型定义的记录系统模型的数据进行处理，来实现构造系统模型的通用可视建模方法，其所用的可视建模编辑器包含如下组元：

层级编辑器：采用MVC结构，以层级模型为数据部件，以层级面板为显示部件，以层级处理器为处理部件，来实现对层级视图及层级模型的编辑；所述层级面板以层级视图对层级模型进行可视显示；

接口编辑器：采用MVC结构，以接口模型为数据部件，以接口面板为显示部件，以接口处理器为处理部件，来实现对接口视图及接口模型的编辑；所述接口面板以接口视图对接口模型进行可视显示；

算法编辑器：采用MVC结构，以算法模型为数据部件，以算法面板为显示部件，以算法处理器为处理部件，来实现对算法视图及算法模型的编辑；所述算法面板以算法视图对算法模型进行可视显示；

流程编辑器：采用MVC结构，以流程模型为数据部件，以流程面板为显示部件，以流程处理器为处理部件，来实现对流程视图及流程模型的编辑；所述流程面板以流程视图对流程模型进行可视显示；

传输编辑器：采用MVC结构，以传输模型为数据部件，以传输面板为显示部件，以传输处理器为处理部件，来实现对传输视图及传输模型的编辑；所述传输面板以传输视图对传输模型进行可视显示；

采用上述可视建模编辑器的组元构造系统模型的具体步骤如下：

1)层级编辑：层级编辑器构造层级模型的过程包括：层级面板接收实际系统建模环境送来的新建构件类型符、添加构件类型符、选择构件类型符、复制构件类型符、删除构件类型符、重名构件类型符的操作信息，向层级处理器发出相应的新建构件类型、添加构件类型、选择构件类型、复制构件类型、删除构件类型、重名构件类型的指令；层级处理器响应前述指令对层级模型进行相应的处理；层级面板以层级视图的形式显示层级模型；

2)接口编辑：模型编辑器对步骤1)得到的层级模型中的构件类型逐一构造接口模型，各接口模型的构造步骤包括：接口面板接收实际系统建模环境送来的对属性符、功能符和事件符进行新建、添加、选择、复制、删除、命名的操作信息，向接口处理器发出相应的对于属性、功能和事件进行新建、添加、选择、复制、删除、命名的指令；接口处理器响应前述指令对接口模型进行相应的处理；接口面板以接口视图的形式可视显示接口模型；实现算法功能的算法模型由步骤3)构造，实现流程功能的流程模型由步骤4)构造；

3)算法编辑：算法编辑器对步骤2)中提到的算法功能逐一构造算法模型，各算法模型的构造步骤包括：算法面板接收实际系统建模环境送来的添加算元符、复制算元符、删除算元符和添加传值符、删除传值符的操作信息，向算法处理器发出相应的添加算元、复制算元、删除算元和添加传值、删除传值的指令；算法处理器响应前述指令，对算法模型进行相应的处理；算法面板以算法视图的形式显示算法模型；

4)流程编辑：流程编辑器对步骤2)中提到的流程功能逐一构造流程模型，各流程模型的构造步骤包括：流程面板接收实际系统建模环境送来的添加活动符、选择活动符、删除活动符的操作信息；流程面板响应前述操作信息向流程处理器发出相应添加活动、选择活动、

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删除活动的指令；流程处理器响应前述指令对流程模型进行相应的的处理；流程面板以流程视图的形式显示流程模型；

5) 传输编辑：传输编辑器对步骤4) 中得到的流程模型中的活动逐一构造传输模型，各传输模型的构造步骤包括：传输面板接收实际系统建模环境送来的添加传输符、选择传输符、删除传输符的操作信息；传输面板响应前述操作信息向传输处理器发出添加传输、选择传输、删除传输的指令；所述传输处理器响应前述指令对传输模型进行相应处理；传输面板以传输视图的形式显示传输模型；

至此，以层级视图、接口视图、算法视图、流程视图、传输视图进行显示的，以层级模型、接口模型、算法模型、流程模型、传输模型为要素所构成的系统模型编辑完成。

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一种构造系统模型的可视建模编辑器

技术领域

[0001] 本发明涉及软件工程技术领域，具体是一种构造系统模型的可视建模编辑器。

背景技术

[0002] 系统建模是人们根据客观事物的规律和特征构造系统模型的活动或过程。系统建模已广泛地存在于科研、工程、军事、生产等各种社会实践活动之中。在信息技术特别是软件技术高度发展的今天，软件已经成为人们进行系统建模的基本工具。这些辅助系统建模的软件工具称为建模编辑器。相对于以文字、公式、形式语言等手段形式的建模编辑器，采用图形方式的建模编辑器以其可视性成为人们的最爱。这类以图形为基本方式的建模编辑器称为可视建模编辑器。

[0003] 随着UML(统一建模语言，Unified Modeling Language)成为主流的面向对象可视化建模语言工业标准，基于UML的CASE(计算机辅助软件工程工具，Computer-AssistedSoftware Engineering)工具自然成为主流的可视建模编辑器，其中的典型代表是Rational Rose，Enterprise Architect等等。由于以UML为基础，这些建模工具天然具有UML带来的缺陷：第一，缺乏建模方法支持：这些工具并不提供建模方法和规则，只提供一些符号表示工具；这些工具是面向程序开发人员使用的，定位于软件开发过程建模，实际上侧重于基于面向对象方法的程序实现模型的描述，并不适用于超越软件开发的通用性系统建模编辑器。第二，非运算性：利用这些工具构造的系统模型不具备足够的完整性和一致性，无法采用自动代码技术将其转化成计算机可运行的软件。这些工具仅能用于产生一些代码片段，要获得完整的可以由计算机运行的软件必须最终由人工进行编辑；第三，难于使用：这些工具是面向程序人员所设计，其复杂和混乱不仅程序员很难掌握，领域人员更无法理解，远不能满足建模实践的需要。上述评论同样适用于基于sysML的面向工程领域系统建模的可视编辑器，其中的典型代表是Rhapsody。

[0004] 基于预制构件进行模型装配的可视建模编辑器，已广泛地应用于各种领域的模型构建，其中的典型代表是Simlink。这类基于预制构件的装配式可视化建模编辑器有两大基本缺陷：必须基于预制构件进行装配，系统模型的构造严重受制于预制构件；预制构件的接口是固定的，由于不支持任意接口的构件集成，这类可视化建模编辑器通常被应用于基于领域构件库进行特定的领域建模，从而并不适合于通用性的系统建模；第二，构件的装配和运行原则也很简单，基于上是由数据的传递关系决定构件的工作协同，同时，随着构件的增多，数据传递的复杂性使得视图可读性急剧变差，因此，这类编辑器虽然声称是进行系统建模，但实际上是用于对简单明确的算法进行建模，不适合进行大型复杂的系统建模；

[0005] 总的看来，目前还缺乏一种容易被普通领域人员理解和掌握的构造系统模型的可视建模编辑器，基于通用性的系统建模规范，支持各种领域建模活动，以构造具有可运算性的系统模型。

发明内容

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[0006] 鉴于现有技术的以上缺点，本发明的目的是提供一种通过基于系统元视图的系统视图的可视建模编辑器，使之能够克服现有技术的以上缺点。

[0007] 本发明基于一个含有计算机可读程序代码的计算机可读存储介质，所述计算机可读程序代码包含一组可以被计算机的处理器所执行的指令，通过基于系统元视图的系统视图对一个由系统元模型定义的记录系统模型的数据进行处理，来实现构造系统模型的通用可视建模方法，其所用的可视建模编辑器包含如下组元：

[0008] 层级编辑器：采用MVC结构，以层级模型为数据部件，以层级面板为显示部件，以层级处理器为处理部件，来实现对层级视图及层级模型的编辑；所述层级面板以层级视图对层级模型进行可视显示；

[0009] 接口编辑器：采用MVC结构，以接口模型为数据部件，以接口面板为显示部件，以接口处理器为处理部件，来实现对接口视图及接口模型的编辑；所述接口面板以接口视图对接口模型进行可视显示；

[0010] 算法编辑器：采用MVC结构，以算法模型为数据部件，以算法面板为显示部件，以算法处理器为处理部件，来实现对算法视图及算法模型的编辑；所述算法面板以算法视图对算法模型进行可视显示；

[0011] 流程编辑器：采用MVC结构，以流程模型为数据部件，以流程面板为显示部件，以流程处理器为处理部件，来实现对流程视图及流程模型的编辑；所述流程面板以流程视图对流程模型进行可视显示；

[0012] 传输编辑器：采用MVC结构，以传输模型为数据部件，以传输面板为显示部件，以传输处理器为处理部件，实现对传输视图及传输模型的编辑；所述传输面板以传输视图对传输模型进行可视显示。

[0013] 采用上述可视建模编辑器的组元构造系统模型的具体步骤如下：

[0014] 1)层级编辑：层级编辑器构造层级模型的过程包括：层级面板接收实际系统建模环境送来的诸如新建构件类型符、添加构件类型符、选择构件类型符、复制构件类型符、删除构件类型符、重名构件类型符的操作信息，向层级处理器发出相应的诸如新建构件类型、添加构件类型、选择构件类型、复制构件类型、删除构件类型、重名构件类型的指令；层级处理器响应前述指令对层级模型进行相应的处理；层级面板以层级视图的形式显示层级模型；

[0015] 2)接口编辑：模型编辑器对步骤1)得到的层级模型中的构件类型逐一构造接口模型，各接口模型的构造步骤包括：接口面板接收实际系统建模环境送来的对属性符、功能符和事件符进行诸如新建、添加、选择、复制、删除、命名的操作信息，向接口处理器发出相应的对于属性、功能和事件进行诸如新建、添加、选择、复制、删除、命名的指令；接口处理器响应前述指令对接口模型进行相应的处理；接口面板以接口视图的形式可视显示接口模型；实现算法功能的算法模型由步骤3)构造，实现流程功能的流程模型由步骤4)构造；

[0016] 3)算法编辑：算法编辑器对步骤2)中提到的算法功能逐一构造算法模型，各算法模型的构造步骤包括：算法面板接收实际系统建模环境送来的诸如添加算元符、复制算元符、删除算元符和如添加传值符、删除传值符的操作信息，向算法处理器发出相应的诸如添加算元、复制算元、删除算元和如添加传值、删除传值的指令；算法处理器响应前述指令，对算法模型进行相应的处理；算法面板以算法视图的形式显示算法模型；

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[0017] 4)流程编辑:流程编辑器对步骤2)中提到的流程功能逐一构造流程模型,各流程模型的构造步骤包括:流程面板接收实际系统建模环境送来的诸如添加活动符、选择活动符、删除活动符的操作信息;流程面板响应前述操作信息向流程处理器发出相应诸如添加活动、选择活动、删除活动的指令;流程处理器响应前述指令对流程模型进行相应的的处理;流程面板以流程视图的形式显示流程模型;

[0018] 5)传输编辑:传输编辑器对步骤4)中得到的流程模型中的活动逐一构造传输模型,各传输模型的构造步骤包括:传输面板接收实际系统建模环境送来的如添加传输符、选择传输符、删除传输符的操作信息;传输面板响应前述操作信息向传输处理器发出如添加传输、选择传输、删除传输的指令;所述传输处理器响应前述指令对传输模型进行相应处理;传输面板以传输视图的形式显示传输模型。

[0019] 至此,以层级视图、接口视图、算法视图、流程视图、传输视图进行显示的,以层级模型、接口模型、算法模型、流程模型、传输模型为要素所构成的系统模型编辑完成。

[0020] 这样,本发明以层级编辑器、接口编辑器、算法编辑器、流程编辑器、传输编辑器为组元,以层级编辑器、接口编辑器、算法编辑器、流程编辑器、传输编辑器分别以层级模型、接口模型、算法模型、流程模型、传输模型及对应视图为编辑对象完成系统模型及系统视图的构造,为各种领域提供了一种具有运算性、通用性、易用性的优点的可视系统建模工具:本发明构造的系统模型及系统视图结构清晰,层次可调,建模粒度可控,具有可被运算的充分一致性;方法统一,既方便自顶向下分析设计,也方便自底向上实现集成,适用于各种系统包括各种应用环境的软件系统及信息系统建模;建模方法简单,完全可视化建模,即使普通领域人员,也能独立轻松构造系统模型及系统视图。

[0021] 概括起来,本发明与现有技术相比,具有如下明显的优点:

[0022] (1)运算性:利用本发明构造的系统模型及系统视图具有可运算性,即具有可以被映射为计算机可运行程序的完整性和充分一致性;

[0023] (2)通用性:本发明构造的系统模型及系统视图结构清晰,层次可调,粒度可控,具有适用于各种系统建模的通用性。即可以进行算法建模,也适合系统快速原型,更适合大型复杂系统建模;既方便自顶向下分析设计,也方便自底向上实现整合集成;既适合基于预制构件的系统集成,也适合基于定制构件的系统扩展,还适合分布式系统的互联互通;既适用于实际工程系统建模,也适用于各种软件系统及信息系统建模;既适用于装备信息系统系统的仿真建模,也适用于管理信息系统建模;既适用于桌面软件系统建模、嵌入式设备软件系统建模、移动终端软件系统建模,也适用于局域网软件系统建模、广域网软件系统建模,也用于云计算环境软件系统建模;既适用于应用软件系统建模,也适用于软件开发环境建模;

[0024] (3)易用性:本发明要素简明,规则简单,方法统一。即使不掌握繁琐的建模语言和计算机编程语言的普通领域人员也很容易利用本发明在相对较短的时间内构造出本领域的具有运算性的系统模型及系统视图,免除了对专业建模人员或程序开发人员的依赖和沟通,完成的系统模型及系统视图更符合领域人员的期望,消除了专业建模人员或程序开发人员的理解偏差;同时,由于省去了大量的沟通时间,建模时间大大缩短。

附图说明:

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[0025] 图1为可视建模编辑器的构成图。

[0026] 图2为建模步骤图。

[0027] 图3是一个实现可视建模编辑器的计算机的框图。

[0028] 图4为一个可视建模编辑器的主界面。

[0029] 图5为业务管理YWGL视图的层级视图。

[0030] 图6为业务管理YWGL接口视图。

[0031] 图7为销售管理XSGL接口视图。

[0032] 图8为生产管理SCGL接口视图。

[0033] 图9为采购管理CGGL接口视图。

[0034] 图10为分销品FXP接口视图。

[0035] 图11为直销品ZXP接口视图。

[0036] 图12为主件ZJ接口视图。

[0037] 图13为零件LJ接口视图。

[0038] 图14为成品CP接口视图。

[0039] 图15为主件加工算法视图。

[0040] 图16为主件交货算法视图。

[0041] 图17为零件加工算法视图。

[0042] 图18为零件交货算法视图。

[0043] 图19为配件接收算法视图。

[0044] 图20为成品装配算法视图。

[0045] 图21为业务主过程流程视图。

[0046] 图22为业务配置流程视图。

[0047] 图23为业务运行流程视图。

[0048] 图24为内部订货流程视图。

[0049] 图25为销售出货流程视图。

[0050] 图26为销售收货流程视图。

[0051] 图27为生产计划流程视图。

[0052] 图28为生产实施流程视图。

[0053] 图29为生产交货流程视图。

[0054] 图30为业务运转循环传输视图。

[0055] 图31为序号清零赋值传输视图。

[0056] 图32为生产实例创建传输视图。

[0057] 图33为生产配置遍历传输视图。

[0058] 图34为生产序号加一传输视图。

[0059] 图35为生产序号赋值传输视图。

[0060] 图36为采购实例创建传输视图。

[0061] 图37为采购配置遍历传输视图。

[0062] 图38为采购序号加一传输视图。

[0063] 图39为采购序号赋值传输视图。

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[0064] 图40为销售序号清零赋值传输视图。

[0065] 图41为销售实例创建传输视图。

[0066] 图42为销售配置遍历传输视图。

[0067] 图43为销售序号加一传输视图。

[0068] 图44为销售序号赋值传输视图。

[0069] 图45为销售生产配置遍历传输视图。

[0070] 图46为销售生产配置比较传输视图。

[0071] 图47为销售生产配置条件传输视图。

[0072] 图48为销售生产赋值传输视图。

[0073] 图49为销售采购配置遍历传输视图。

[0074] 图50为销售采购配置比较传输视图。

[0075] 图51为销售采购配置条件传输视图。

[0076] 图52为销售采购配置传输视图。

[0077] 图53为生产运行遍历传输视图。

[0078] 图54为采购运行遍历传输视图。

[0079] 图55为销售运行遍历传输视图。

[0080] 图56为销售生产运行遍历传输视图。

[0081] 图57为销售生产运行比较传输视图。

[0082] 图58为销售生产运行条件传输视图。

[0083] 图59为生产销售收货传输视图。

[0084] 图60为生产内部订货传输视图。

[0085] 图61为销售采购运行遍历传输视图。

[0086] 图62为销售采购运行比较传输视图。

[0087] 图63为销售采购运行条件传输视图。

[0088] 图64为采购销售收货传输视图。

[0089] 图65为采购内部订货传输视图。

[0090] 图66为合同统计传输视图。

[0091] 图67为需求统计传输视图。

[0092] 图68为订货统计传输视图。

[0093] 图69为出货统计传输视图。

[0094] 图70为存货统计传输视图。

[0095] 图71为收货统计传输视图。

[0096] 图72为主件待工统计传输视图。

[0097] 图73为零件待工统计传输视图。

[0098] 图74为配件接收传输视图。

[0099] 图75为成品装配传输视图。

[0100] 图76为完工交货传输视图。

[0101] 图77为交货总量统计传输视图。

[0102] 图78为飞机座舱训练系统视图的层级视图。

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[0103] 图79为B11飞机发动机操作接口视图。

[0104] 图80为B21混合气比控制手柄接口视图。

[0105] 图81为B22磁电机电门接口视图。

[0106] 图82为B23油门接口视图。

[0107] 图83为B24电门面板接口视图。

[0108] 图84为B25转速表接口视图。

[0109] 图85为B26燃油流量表接口视图。

[0110] 图86为B27滑油压力表接口视图。

[0111] 图87为B31燃油泵电门接口视图。

[0112] 图88为B32着陆灯接口视图。

[0113] 图89为B33航行灯接口视图。

[0114] 图90为B34指针接口视图。

[0115] 图91为B35表盘接口视图。

[0116] 图92为Be01打开算法视图。

[0117] 图93为Be02关闭算法视图。

[0118] 图94为Be03打开算法视图。

[0119] 图95为Be04关闭算法视图。

[0120] 图96为Be05开启算法视图。

[0121] 图97为Be06关闭算法视图。

[0122] 图98为Be07工作算法视图。

[0123] 图99为Be08停止算法视图。

[0124] 图100为Be09工作算法视图。

[0125] 图101为Be10停止算法视图。

[0126] 图102为Be11打开算法视图。

[0127] 图103为Be12关闭算法视图。

[0128] 图104为Be13打开算法视图。

[0129] 图105为Be14关闭算法视图。

[0130] 图106为Be15打开算法视图。

[0131] 图107为Be16关闭算法视图。

[0132] 图108为Be17转动算法视图。

[0133] 图109为Be18归零算法视图。

[0134] 图110为Bc01主过程流程视图。

[0135] 图111为Bc02开车流程视图。

[0136] 图112为Bc03停车流程视图。

[0137] 图113为Bc04打开部件电源流程视图。

[0138] 图114为Bc05关闭部件电源流程视图。

[0139] 图115为Bc06工作流程视图。

[0140] 图116为Bc07停止流程视图。

[0141] 图117为Bc01主过程帧循环传输符视图。

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[0142] 图118为训练开始条件传输符视图。

[0143] 图119为训练结束条件传输符视图。

[0144] 图120为第一相同比较传输符视图。

[0145] 图121为第一条件传输符视图。

具体实施方式

[0146] 计算机一般包括一个中央处理器，一个内存和输入输出接口和一个总线。另外，计算机与输入输出设备、存储介质相连接。中央处理器负责计算和控制计算机的功能。中央处理器可以只包含一个中央处理单元，也可以是分布在一个或多个地方的多个中央处理单元。

[0147] 内存介质可能由任何已知的计算机可读存储介质构成。比如，缓冲存储可以暂存一些程序代码以便在程序执行时降低从大容量存储器中提取代码的时间。同时，内存可以驻留在某个物理位置，由一种或多种数据存储，或以不同形式分布在多个物理系统中。另外，内存还可以分布在本地局域网(LAN)或广域网(WAN)上。内存中可以包含实现基于系统元视图构造系统视图的通用建模方法的程序代码，也可能包括图中未显示的其他代码，如操作系统。

[0148] 输入输出接口允许计算机与存储介质或另一台计算机交换信息。输入输出设备包含任何已知的外部设备类型，如显示设备、键盘、鼠标、打印机、音响、手持设备、面罩，等等。总线提供计算机内部各个部件之间的通信连接，包括电气、光学、无线等多种传送连接形式。存储介质包括任何已知的计算机可读存储介质，如磁盘，光盘等等。存储介质可以包含一个或多个系统元视图构造的通用系统视图实例。业内人士可以料想，本发明可能实现为全硬件产品、全软件产品，或通常称为模块的软硬件结合产品。另外，本发明可以实现为一个保存在计算机可读介质的计算机程序产品。计算机可读介质可能是，举例来说但并不限于：电子的、磁性的、光学的、电磁的、红外或半导体系统、装置、设备或前述项的结合。更具体的非尽列的计算机可读存储介质的例子如下：随机存储内存(RAM)、只读内存(ROM)、可擦写可编程只读内存(EPROM或闪存)、可移动只读存储器(CD-ROM)、光存储设备、磁存储设备，以及任何前述项的结合体。实现本发明的方法的计算机程序代码可以用一种或多种程序语言编写，包括诸如Java，Small，C++，C#等，以及诸如C之类的面向过程的编程语言。程序代码可以运行在个人电脑，手持设备或局域网LAN、广域网WAN上。

[0149] 业内人士当然知道本发明的方法也可以表示以图形表示，这些图形表示都可以实现为计算机程序代码。这些程序代码可以被一般电脑、专用电脑和其他可编程数据处理装置处理，实现这些图形表示的功能符。

[0150] 下面结合附图及两个具体实施例对本发明做进一步详细的说明：第一个实施例A为构造业务管理YWGL视图，第二个实施例B为构造飞机座舱训练系统视图。需要说明的是，这两个实施例仅是本发明的具体应用示例而已，本发明的技术实质不受这两个实例限制。

[0151] 实施例A：业务管理YWGL模型编辑

[0152] 本实施例假设的企业的的业务模式是：通过销售自己生产的产品和外部采购的产品来获取利润，将对实现如下业务管理意图的业务管理系统进行建模：

[0153] (1)明确区分生产管理、采购管理、销售管理三大模块；

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[0154] (2)配置功能:将生产品种数目和采购品种数目的和用于配置销售品种数目;

[0155] (3)运行功能:销售管理模块对每项产品的直销和销售的合同订量和出货数量进行统计,接收生产管理模块、采购管理模块的交货信息,根据销售状况向生产管理模块、采购管理模块发出订货信息;生产管理模块、采购管理接收销售管理模块的订货信息,启动内部过程,并向销售管理模块提交交货信息。

[0156] 下面给出构造本实施例的系统视图的详细过程。

[0157] 层级编辑

[0158] 见图5,下面给出构造本实施例的层级视图的详细过程。

[0159] 在建模开始前的初始状态,层级编辑器就为层级视图的构件符树省缺创建一个根节点,该根节点上的构件类型符称为根构件类型符;

[0160] 层级面板接收从实际系统建模环境送来的选中根构件类型符的操作信息,向层级处理器发出选中根构件类型的指令;层级处理器响应前述指令将层级模型的根构件类型设置为所涉构件类型;层级面板接收实际系统建模环境送来的将所涉构件类型符名称修改为"业务管理YWGL"字样的操作信息,向层级处理器发出将所涉构件类型的名称修改为"业务管理YWGL"字样的指令;层级处理器响应前述指令,将根构件类型的名称修改为"业务管理YWGL";根据构件类型名称将根构件类型符称为业务管理YWGL构件类型符,其他构件类型符依此类推,后面不再赘述;层级接收面板实际系统建模环境送来的将所涉构件类型实例数量设置为1的操作信息,向层级处理器发出将所涉构件类型实例数量设置为1的指令,层级处理器响应前述指令,将业务管理YWGL构件类型的构件实例数量设置为1;层级面板以层级视图对层级模型进行可视显示;

[0161] 层级面板接收实际系统建模环境送来的添加子构件类型符的操作信息,向层级处理器发出为所涉构件添加子构件类型的指令;层级处理器响应前述指令为业务管理YWGL构件类型添加一个子构件类型;层级处理器将前述子构件类型设置为所涉构件类型;层级面板以层级视图对层级模型进行可视显示,并同时将前述子构件类型符设置为所涉构件类型符;层级面板接收从实际系统建模环境送来的将所涉构件类型符的名称修改为"销售管理XSGL"字样的操作信息,向层级处理器发送将所涉构件类型的名称修改为"销售管理XSGL"的指令;层级处理器响应前述指令将所涉构件类型的名称修改为"销售管理XSGL";层级面板以层级视图对层级模型进行可视显示;

[0162] 层级面板接收实际系统建模环境送来的选中业务管理YWGL构件类型符的操作信息,向层级处理器发出选中业务管理YWGL构件类型的指令;层级处理器响应前述指令,将业务管理YWGL构件类型设置为所涉构件类型;层级面板将业务管理YWGL构件类型符设置为所涉构件类型符;层级面板接收从实际系统建模环境送来的添加子构件类型符的操作信息,向层级处理器发出添加一个子构件类型的指令;层级处理器响应前述指令为业务管理YWGL构件类型添加一个子构件类型;层级处理器将前述子构件类型设置为所涉构件类型;层级面板将前述子构件类型符设置为所涉构件类型符;层级面板接收从实际系统建模环境送来的对所涉构件类型符将名称修改为"生产管理SCGL"字样的操作信息,向层级处理器发出将所涉构件类型的名称修改为"生产管理SCGL"字样的指令;层级处理器响应前述指令,将所涉构件类型的名称修改为"生产管理SCGL";层级面板接收从实际系统建模环境送来的将所涉构件类型符的实例数量设置为0的操作信息,向层级处理器发出将所涉构件类型的构件

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实例数量设置为0的指令；层级处理器响应前述指令，将生产管理SCGL构件类型的构件实例数量设置为0；层级面板以层级视图对层级模型进行可视显示；

[0163] 与添加生产管理SCGL构件类型符的步骤相似，层级编辑器接收并响应实际系统建模环境送来的操作信息为业务管理YWGL构件类型符添加一个采购管理CGGL构件类型符作为子构件类型符，实例数量设置为0；层级面板以层级视图对层级模型进行可视显示；

[0164] 相似地，层级编辑器接收并响应实际系统建模环境送来的操作信息为销售管理XSGL构件类型符添加一个子构件类型符，命名为分销品FXP构件类型符，实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0165] 相似地，层级编辑器接收并响应实际系统建模环境送来的操作信息为销售管理XSGL构件类型符添加一个子构件类型符，命名为直销品ZXP构件类型符，实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0166] 相似地，层级编辑器接收并响应实际系统建模环境送来的操作信息为生产管理SCGL构件类型符添加一个子构件类型符，命名为主件ZJ构件类型符，实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0167] 相似地，层级编辑器接收并响应实际系统建模环境送来的操作信息为生产管理SCGL构件类型符添加一个子构件类型符，命名为零件LJ构件类型符，实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0168] 相似地，层级编辑器接收并响应实际系统建模环境送来的操作信息为生产管理SCGL构件类型符添加一个子构件类型符，命名为成品CP构件类型符，实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0169] 至此，本实施例的层级视图及层级模型编辑完成。

[0170] 接口编辑

[0171] 接下来，将介绍层级视图中各个构件类型符的接口视图的构造过程。

[0172] 业务管理YWGL接口编辑

[0173] 见图6，层级面板接收从实际系统建模环境从来的选中业务管理YWGL构件类型符的操作信息，向层级处理器发出选中业务管理YWGL构件类型的指令，层级处理器响应前述指令将业务管理YWGL构件类型设置为所涉构件类型；层级面板将业务管理YWGL构件类型符设置成为所涉构件类型符并可视显示层级视图；

[0174] 接口面板接收从实际系统建模环境送来的添加属性符的操作消息，向接口处理器发出为所涉构件类型添加属性的指令；接口处理器响应前述指令为业务管理YWGL构件类型添加一个新属性，并将新属性设置为所涉属性；接口面板刷新接口视图时为业务管理YWGL构件类型符添加一个新属性符，并将将前述新属性符设置为所涉属性符；接口面板接收从实际系统建模环境送来的将所涉属性符的数据类型修改为bool类型的操作信息，向接口处理器发出将所涉属性的数据类型修改为bool类型的指令；接口处理器响应前述指令将所涉属性的数据类型修改为bool类型；接口面板接收从实际系统建模环境送来的将所涉属性符的属性名称修改为“业务运转态”字样的操作信息，向接口处理器发出将所涉属性符的属性名称修改为“业务运转态”字样的指令，接口处理器响应前述操作命令将所涉属性的属性名称修改为业务运转态；前述属性名称为业务运转态的属性简称为业务运转态属性；后续属性符依此类推，不再赘述；接口面板接收从实际系统建模环境送来的将所涉属性符的属性

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值设置为true的操作信息，向接口处理器发出将所涉属性值设置为true的指令；接口处理器响应前述指令将业务运转态属性的属性值设置为true；

[0175] 相似地，接口编辑器为业务管理YWGL接口视图添加一个生产正常态属性符，数据类型为bool类型，属性值为true；

[0176] 相似地，接口编辑器为业务管理YWGL接口视图添加一个生产品种数目属性符，数据类型为整数类型，属性值为3；

[0177] 相似地，接口编辑器为业务管理YWGL接口视图添加一个采购品种数目属性符，数据类型为整数类型，属性值为2；

[0178] 相似地，接口编辑器为业务管理YWGL接口视图添加一个销售品种数目属性符，数据类型为整数类型，属性值为0；

[0179] 相似地，接口编辑器为业务管理YWGL接口视图添加一个产品序号属性符，数据类型为整数类型，属性值为0；

[0180] 相似地，接口编辑器为业务管理YWGL接口视图添加一个常数零属性符，数据类型为整数类型，属性值为0；

[0181] 相似地，接口编辑器为业务管理YWGL接口视图添加一个比较结果属性符，数据类型为bool类型，属性值为true；

[0182] 接口面板接收从实际系统建模环境送来的添加功能符的操作消息，向接口处理器发出为所涉构件类型添加功能的指令；接口处理器响应前述指令为业务管理YWGL构件类型符添加一个新流程功能，并将前述新功能设置为所涉功能；接口面板刷新接口视图，并将新功能符设置为所涉功能符；接口面板接收从实际系统建模环境送来的将所涉功能符的功能名称修改为“业务主过程”字样的操作信息，向接口处理器发出将所涉功能的功能名称修改为“业务主过程”字样的指令；接口处理器响应接口面板送来的前述指令，将前述新功能的功能名称修改为“业务主过程”字样；前述功能名称为“业务主过程”的功能简称为业务主过程功能；后续功能符依此类推，不再赘述；

[0183] 相似地，接口编辑器为业务管理YWGL接口视图添加一个流程功能符，命名为业务配置功能符；

[0184] 相似地，接口编辑器为业务管理YWGL接口视图添加一个流程功能符，命名为业务运行功能符；

[0185] 至此，业务管理YWGL接口视图及业务管理YWGL接口模型编辑完毕。

[0186] 销售管理XSGL接口编辑

[0187] 见图7，层级编辑器接收并响应从实际系统建模环境送来的操作信息，将销售管理XSGL构件类型符设置成为所涉构件类型符；

[0188] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为销售管理XSGL构件类型符添加一个新属性符；将前述新属性符设置为所涉属性符；将所涉属性符的数据类型修改为string类型；将所涉属性符的属性符名称修改为产品名称；将产品名称属性符的属性值设置为销售品；

[0189] 相似地，接口编辑器为销售管理XSGL接口视图添加一个产品序号属性符，数据类型为整数类型，属性值为1；

[0190] 相似地，接口编辑器为销售管理XSGL接口视图添加一个存货数量属性符，数据类

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型为整数类型，属性值为0；

[0191] 相似地，接口编辑器为销售管理XSGL接口视图添加一个最低存量属性符，数据类型为整数类型，属性值为0；

[0192] 相似地，接口编辑器为销售管理XSGL接口视图添加一个合同订量属性符，数据类型为整数类型，属性值为0；

[0193] 相似地，接口编辑器为销售管理XSGL接口视图添加一个收货数量属性符，数据类型为整数类型，属性值为0；

[0194] 相似地，接口编辑器为销售管理XSGL接口视图添加一个订货数量属性符，数据类型为整数类型，属性值为0；

[0195] 相似地，接口编辑器为销售管理XSGL接口视图添加一个出货数量属性符，数据类型为整数类型，属性值为0；

[0196] 相似地，接口编辑器为销售管理XSGL接口视图添加一个出货总量属性符，数据类型为整数类型，属性值为0；

[0197] 相似地，接口编辑器为销售管理XSGL接口视图添加一个需求数量属性符，数据类型为整数类型，属性值为0；

[0198] 接口编辑器依次接收依次并响应实际系统建模环境送来的操作信息，完成相应操作：为销售管理XSGL接口视图添加一个流程功能符；将前述新功能符设置为所涉功能符；将所涉功能符的功能名称修改为内部订货，前述功能名称为内部订货的功能符简称为内部订货功能符；

[0199] 相似地，接口编辑器为销售管理XSGL接口视图添加一个流程功能符，命名为销售出货功能符；

[0200] 相似地，接口编辑器为销售管理XSGL接口视图添加一个流程功能符，命名为销售订货功能符；

[0201] 至此，销售管理XSGL接口视图编辑完毕。

[0202] 生产管理SCGL接口编辑

[0203] 见图8，层级编辑器接收并响应从实际系统建模环境送来的操作信息，将生产管理SCGL构件类型符设置成为所涉构件类型符；

[0204] 接口编辑器接收依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为生产管理SCGL接口视图添加一个新属性符；将前述新属性符设置为所涉属性符；将所涉属性符的数据类型修改为string类型；将所涉属性符的属性符名称修改为产品名称；将产品名称属性符的属性值设置为自研品；

[0205] 相似地，接口编辑器为生产管理SCGL接口视图添加一个产品序号属性符，数据类型为整数类型，属性值为1；

[0206] 相似地，接口编辑器为生产管理SCGL接口视图添加一个订货数量属性符，数据类型为整数类型，属性值为0；

[0207] 相似地，接口编辑器为生产管理SCGL接口视图添加一个完成数量属性符，数据类型为整数类型，属性值为0；

[0208] 相似地，接口编辑器为生产管理SCGL接口视图添加一个交货数量属性符，数据类型为整数类型，属性值为0；

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[0209] 相似地，接口编辑器为生产管理SCGL接口视图添加一个交货总量属性符，数据类型为整数类型，属性值为0；

[0210] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为生产管理SCGL构件类型符添加一个流程功能符；将前述新功能符设置为所涉功能符；将所涉功能符的功能名称修改为生产计划；

[0211] 相似地，接口编辑器为生产管理SCGL接口视图添加一个流程功能符，命名为生产实施功能符；

[0212] 相似地，接口编辑器为生产管理SCGL接口视图添加一个流程功能符，命名为生产交货功能符；

[0213] 至此，生产管理SCGL接口视图编辑完毕。

[0214] 采购管理CGGL接口编辑

[0215] 见图9，采购管理CGGL接口视图的构造过程如下：

[0216] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将采购管理CGGL构件类型符设置成为所涉构件类型符；

[0217] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为采购管理CGGL构件类型符添加一个新属性符；将前述新属性符设置为所涉属性符；将所涉属性符的数据类型修改为string类型；将所涉属性符的属性符名称修改为产品名称；将产品名称属性符的属性值设置为采购品；

[0218] 相似地，接口编辑器为生产管理CGGL接口视图添加一个产品序号属性符，数据类型为整数类型，属性值为1；

[0219] 相似地，接口编辑器为生产管理CGGL接口视图添加一个待购数量属性符，数据类型为整数类型，属性值为0；

[0220] 相似地，接口编辑器为生产管理CGGL接口视图添加一个购回数量属性符，数据类型为整数类型，属性值为0；

[0221] 相似地，接口编辑器为生产管理CGGL接口视图添加一个交货数量属性符，数据类型为整数类型，属性值为0；

[0222] 相似地，接口编辑器为生产管理CGGL接口视图添加一个交货总量属性符，数据类型为整数类型，属性值为0；

[0223] 接口编辑器接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为采购管理CGGL构件类型符添加一个算法功能符；将前述新功能符设置为所涉功能符；将所涉功能符的功能名称修改为采购实施；前述功能名称为采购实施的功能符简称为采购实施功能符；

[0224] 相似地，接口编辑器为采购管理CGGL接口视图添加一个算法功能符，命名为采购交货功能符；

[0225] 至此，采购管理CGGL接口视图编辑完毕。

[0226] 分销品FXP接口编辑

[0227] 见图10，层级编辑器接收并响应从实际系统建模环境送来的操作信息，将分销品FXP构件类型符设置成为所涉构件类型符；

[0228] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操

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作：为分销品FXP构件类型符添加一个新属性符；将前述新属性符设置为所涉属性符；将所涉属性符的数据类型修改为整数类型；将所涉属性符的属性符名称修改为最低存量；前述操作信息将最低存量属性符的属性值设置为5；

[0229] 相似地，接口编辑器为分销品FXP接口视图添加一个合同订量属性符，数据类型为整数类型，属性值为12；

[0230] 相似地，接口编辑器为分销品FXP接口视图添加一个出货数量属性符，数据类型为整数类型，属性值为8；

[0231] 至此，分销品FXP接口视图编辑完毕。

[0232] 直销品ZXP接口编辑

[0233] 见图11，层级编辑器接收并响应从实际系统建模环境送来的操作信息，将直销品ZXP构件类型符设置成为所涉构件类型符；

[0234] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为直销品ZXP构件类型符添加一个新属性符；将前述新属性符设置为所涉属性符；将所涉属性符的数据类型修改为整数类型；将所涉属性符的属性符名称修改为最低存量；将最低存量属性符的属性值设置为6；

[0235] 相似地，接口编辑器为直销品ZXP接口视图添加一个合同订量属性符，数据类型为整数类型，属性值为3；

[0236] 相似地，接口编辑器为直销品ZXP接口视图添加一个出货数量属性符，数据类型为整数类型，属性值为4；

[0237] 至此，直销品ZXP接口视图编辑完毕。

[0238] 主件ZJ接口编辑

[0239] 见图12，层级编辑器接收并响应从实际系统建模环境送来的操作信息，将主件ZJ构件类型符设置成为所涉构件类型符；

[0240] 接口编辑器依次接收并响应从实际系统建模环境送来的添加属性符的操作消息，完成相应操作：为主件ZJ构件类型符添加一个新属性符；将前述新属性符设置为所涉属性符；将所涉属性符的数据类型修改为string类型；将所涉属性符的属性符名称修改为主件名称；将主件名称属性符的属性值设置为主件；

[0241] 相似地，接口编辑器为主件ZJ接口视图添加一个待工数目属性符，数据类型为整数类型，属性值为0；

[0242] 相似地，接口编辑器为主件ZJ接口视图添加一个完工数目属性符，数据类型为整数类型，属性值为0；

[0243] 相似地，接口编辑器为主件ZJ接口视图添加一个交货数目属性符，数据类型为整数类型，属性值为0；

[0244] 相似地，接口编辑器为主件ZJ接口视图添加一个交货总数属性符，数据类型为整数类型，属性值为0；

[0245] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为主件ZJ构件类型符添加一个算法功能符；将前述新功能符设置为所涉功能符；将所涉功能符的功能名称修改为主件加工；前述功能名称为主件加工的功能符简称为主件加工功能符；

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[0246] 相似地，接口编辑器为主件LJ接口视图添加一个算法功能符，命名为主件交货功能符；

[0247] 至此，主件ZJ接口视图编辑完毕。

[0248] 零件LJ接口编辑

[0249] 见图13，层级编辑器接收并响应从实际系统建模环境送来的操作信息，将零件LJ构件类型符设置成为所涉构件类型符；

[0250] 接口编辑器依次接收并响应从实际系统建模环境送来的添加属性符的操作消息，完成相应操作：为零件LJ构件类型符添加一个新属性符；将前述新属性符设置为所涉属性符；将所涉属性符的数据类型修改为string类型；将所涉属性符的属性符名称修改为零件名称；将零件名称属性符的属性值设置为零件；

[0251] 相似地，接口编辑器为零件LJ接口视图添加一个待工数目属性符，数据类型为整数类型，属性值为0；

[0252] 相似地，接口编辑器为零件LJ接口视图添加一个完工数目属性符，数据类型为整数类型，属性值为0；

[0253] 相似地，接口编辑器为零件LJ接口视图添加一个交货数目属性符，数据类型为整数类型，属性值为0；

[0254] 相似地，接口编辑器为零件LJ接口视图添加一个交货总数属性符，数据类型为整数类型，属性值为0；

[0255] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为零件LJ构件类型符添加一个算法功能符；将前述新功能符设置为所涉功能符；将所涉功能符的功能名称修改为零件加工；前述功能名称为零件加工的功能符简称为零件加工功能符；

[0256] 相似地，接口编辑器为零件LJ接口视图添加一个算法功能符，命名为零件交货功能符；

[0257] 至此，零件LJ接口视图编辑完毕。

[0258] 成品CP接口编辑

[0259] 见图14，层级编辑器接收并响应从实际系统建模环境送来的操作信息，将成品CP构件类型符设置成为所涉构件类型符；

[0260] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为成品CP构件类型符添加一个新属性符；将前述新属性符设置为所涉属性符；将所涉属性符的数据类型修改为string类型；将所涉属性符的属性符名称修改为成品名称；将成品名称属性符的属性值设置为成品；

[0261] 相似地，接口编辑器为成品CP接口视图添加一个待工数目属性符，数据类型为整数类型，属性值为0；

[0262] 相似地，接口编辑器为成品CP接口视图添加一个完工数目属性符，数据类型为整数类型，属性值为0；

[0263] 相似地，接口编辑器为成品CP接口视图添加一个单套主件数量属性符，数据类型为整数类型，属性值为2；

[0264] 相似地，接口编辑器为成品CP接口视图添加一个单套零件数量属性符，数据类型

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为整数类型，属性值为6；

[0265] 相似地，接口编辑器为成品CP接口视图添加一个主件存量属性符，数据类型为整数类型，属性值为0；

[0266] 相似地，接口编辑器为成品CP接口视图添加一个主件收货量属性符，数据类型为整数类型，属性值为0；

[0267] 相似地，接口编辑器为成品CP接口视图添加一个零件存量属性符，数据类型为整数类型，属性值为0；

[0268] 相似地，接口编辑器为成品CP接口视图添加一个零件收货量属性符，数据类型为整数类型，属性值为0；

[0269] 接口编辑器接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为成品CP构件类型符添加一个算法功能符；将前述新功能符设置为所涉功能符；将所涉功能符的功能名称修改为配件接收；前述功能名称为配件接收的功能符简称为配件接收功能符；

[0270] 相似地，接口编辑器为成品CP接口视图添加一个算法功能符，命名为成品装配功能符；

[0271] 至此，成品CP接口视图编辑完毕。

[0272] 算法编辑

[0273] 接下来，将详细说明各个算法视图的构造过程。

[0274] 主件加工算法编辑

[0275] 见图15，主件加工算法视图的构造过程如下：

[0276] 层级面板接收实际系统建模环境送来的选中主件ZJ构件类型符的操作信息，向层级处理器发出将主件ZJ构件类型设置为所涉构件类型的指令；层级处理器响应前述指令将主件ZJ构件类型设置为所涉构件类型；接口面板接收实际系统建模环境送来的选中主件加工功能符的操作信息，向接口处理器发出将主件加工功能设为所涉功能的指令；接口处理器响应前述指令将主件加工功能设置为所涉功能；接口面板刷新接口视图将主件加工功能符设置为所涉功能符；为描述方便起见，根据功能名称将实现主件加工功能符的算法视图简称为主件加工算法视图；后续其他算法视图依此类推，不再赘述；

[0277] 算法面板接收实际系统建模环境送来的添加添加一个赋值算符的操作信息，向算法处理器发出添加一个添加一个赋值算元的指令；算法处理器响应前述指令添加一个赋值算元；所述赋值算元符简称为主件待工完工赋值符；所述赋值算符已经预先具有一个输入属性符和输出属性符共两个属性符；算法面板接收实际系统建模环境送来的建立从主件ZJ构件类型符的待工数目属性符向主件待工完工赋值算符的输入属性符的传值符的操作信息；算法面板响应该操作信息向算法处理器发出建立从主件ZJ构件类型符的待工数目属性向主件待工完工赋值算的输入属性的传值的指令；算法处理器响应前述指令，建立从主件ZJ构件类型的待工数目属性向主件待工完工赋值算的输入属性的传值；算元面板刷新显示算法视图，建立起建立从主件ZJ构件类型符的待工数目属性符向主件待工完工赋值算符的输入属性符的传值符；算法面板接收实际系统建模环境送来的建立从主件待工完工赋值算符的输出属性符向主件ZJ构件类型符的完工数目属性符的传值符的操作信息；算法面板响应该操作信息向算法处理器发出建立从主件待工完工赋值算元的输出属性向主件ZJ构件

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类型的完工数目属性的传值的指令；算法处理器响应前述指令，建立从主件待工完工赋值算元的输出属性向主件ZJ构件类型的完工数目属性的传值；算元面板刷新显示算法视图，建立起建立从主件待工完工赋值算符的输出属性符向主件ZJ构件类型符的完工数目属性符的传值符；

[0278] 相似地，算法编辑器依次接收实际系统建模环境送来的操作信息并响应操作信息执行相应操作：添加一个减法算符，简称主件待工清零算符；建立从主件ZJ构件类型的待工数目属性符向主件待工清零算符的被减数属性符的传值符；建立从主件ZJ构件类型的待工数目属性符向主件待工清零算符的减数属性符的传值符；建立从主件待工清零算符的差数属性符向主件ZJ构件类型的待工数目属性符的传值符；

[0279] 至此，主件加工功能算法视图编辑完毕。

[0280] 主件交货算法编辑

[0281] 见图16，接口编辑器接收并响应实际系统建模环境送来的选中主件交货功能符的操作信息，将主件交货功能符设置为所涉功能符；

[0282] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个赋值算符，简称主件完工交货算符；所述赋值算符已经预先具有输入、输出共两个属性符；建立从主件ZJ构件类型符的完工数目属性符向主件完工交货算符的输入属性符的传值符；建立从主件完工交货算符的输出属性符向主件ZJ构件类型符的交货数目属性符的传值符；

[0283] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个加法算符，简称主件交货总数算符；建立从主件ZJ构件类型符的完工数目属性符向主件交货总数算符的被加数属性符的传值符；建立从主件ZJ构件类型符的交货总量属性符向主件交货总数算符的加数属性符的传值符；建立从主件交货总数算符的和数属性符向主件ZJ构件类型符的交货总量属性符的传值符；

[0284] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个减法算符，简称为主件完工清零算元；建立从主件ZJ构件类型符的完工数目属性符向减法算符的被减数属性符的传值符；建立从主件ZJ构件类型符的完工数目属性符向减法算符的减数属性符的传值符；建立从减法算符的差数属性符向主件ZJ构件类型符的完工数目属性符的传值符；

[0285] 至此，主件交货算法视图编辑完毕。

[0286] 零件加工算法编辑

[0287] 见图17，零件加工算法视图的构造过程如下：

[0288] 层级编辑器接收并响应实际系统建模环境送来的操作信息，将零件LJ构件类型符设置为所涉构件类型符；接口编辑器接收并响应实际系统建模环境送来的操作信息，将零件加工功能符设置为所涉功能符；为描述方便起见，根据功能名称将实现零件加工功能符对应的算法视图简称为零件加工算法视图；后续其他功能符对应的算法视图依此类推，不再赘述；

[0289] 算法编辑器依次接收并响应实际系统建模环境送来操作信息，完成相应操作：添加一个赋值算符，简称为零件待工完工赋值符；所述赋值算符已经预先具有一个输入属性符和输出属性符共两个属性符；建立从零件LJ构件类型的待工数目属性符向零件待工完工

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赋值算符的输入属性符的传值符；建立从零件待工完工赋值算符的输出属性符向零件LJ构件类型的完工数目属性符的传值符；

[0290] 相似地，算法编辑器依次接收实际系统建模环境送来的操作信息并响应操作信息执行相应操作：添加一个减法算符，简称零件待工清零算符；建立从零件LJ构件类型的待工数目属性符向零件待工清零算符的被减数属性符的传值符；建立从零件LJ构件类型的待工数目属性符向零件待工清零算符的减数属性符的传值符；建立从零件待工清零算符的差数属性符向零件LJ构件类型的待工数目属性符的传值符；

[0291] 至此，零件加工功能算法视图编辑完毕。

[0292] 零件交货算法编辑

[0293] 见图18，接口编辑器接收并响应实际系统建模环境送来的选中零件交货功能符的操作信息，将零件交货功能符设置为所涉功能符；

[0294] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个赋值算符，简称零件完工交货算符；所述赋值算符已经预先具有输入、输出共两个属性符；建立从零件LJ构件类型符的完工数目属性符向零件完工交货算符的输入属性符的传值符；建立从零件完工交货算符的输出属性符向零件LJ构件类型符的交货数目属性符的传值符；

[0295] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个加法算符，简称零件交货总数算符；建立从零件LJ构件类型符的完工数目属性符向零件交货总数算符的被加数属性符的传值符；建立从零件LJ构件类型符的交货总量属性符向零件交货总数算符的加数属性符的传值符；建立从零件交货总数算符的和数属性符向零件LJ构件类型符的交货总量属性符的传值符；

[0296] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个减法算符，简称为零件完工清零算元；建立从零件LJ构件类型符的完工数目属性符向减法算符的被减数属性符的传值符；建立从零件LJ构件类型符的完工数目属性符向减法算符的减数属性符的传值符；建立从减法算符的差数属性符向零件LJ构件类型符的完工数目属性符的传值符；

[0297] 至此，零件交货算法视图编辑完毕。

[0298] 配件接收算法编辑

[0299] 见图19，层级编辑器接收并响应实际系统建模环境送来的操作信息，将成品CP构件类型符设置为所涉构件类型符；接口编辑器接收并响应实际系统建模环境送来的操作信息，将配件接收功能符设置为所涉功能符；

[0300] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，完成相应操作：添加一个加法算符，简称主件接收算符；建立从成品CP构件类型符的主件存量属性符向主件接收算符的被加数属性符的传值符；建立从成品CP构件类型符的主件收货量属性符向主件接收算符的加数属性符的传值符；建立从主件接收算符的和数属性符向成品CP构件类型符的主件存量属性符的传值符；

[0301] 相似地，算法编辑器依次接收实际系统建模环境送来的操作信息并响应操作信息执行相应操作：添加一个加法算符，简称零件接收算符；建立从成品CP构件类型符的零件存量属性符向零件接收算符的被加数属性符的传值符；建立从成品CP构件类型符的零件收货

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量属性符向零件接收算符的加数属性符的传值符；建立从零件接收算符的和数属性符向成品CP构件类型符的零件存量属性符的传值符；

[0302] 至此，成品CP构件类型符的配件接收功能符对应的算法视图编辑完毕。

[0303] 成品装配算法编辑

[0304] 见图20，接口编辑器接收并响应实际系统建模环境送来的操作信息，将成品装配功能符设置为所涉功能符；

[0305] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个乘法算符，简称装配主件算元，所述乘法算符已经预先具有被乘数属性符、乘数属性符及积数属性符共三个属性符；建立从成品CP构件类型符的待工数目属性符向装配主件算符的被乘数属性符的传值符；建立从所涉构件类型符的单套主件ZJ数属性符向装配主件算符的乘数属性符的传值符；

[0306] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个减法算符，简称装配主件存量算符；建立从成品CP构件类型符的主件存量属性符向装配主件存量算符的被减数属性符的传值符；建立从装配主件算符的积数属性符向装配主件存量算符的减数属性符的传值符；建立从装配主件存量算符的差数属性符向成品CP构件类型符的主件存量属性符的传值符；

[0307] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个乘法算符，简称装配零件算符；建立从成品CP构件类型符的待工数目属性符向装配零件算符的被乘数属性符的传值符；建立从所涉构件类型符的单套零件LJ数属性符向装配零件算符的乘数属性符的传值符；

[0308] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个减法算符，简称装配零件存量算符；建立从成品CP构件类型符的零件存量属性符向装配零件存量算符的被减数属性符的传值符；建立从装配零件算符的积数属性符向装配零件存量算符的减数属性符的传值符；建立从装配零件存量算符的差数属性符向成品CP构件类型符的零件存量属性符的传值符；

[0309] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个赋值算符，简称成品完工算符；所述赋值算符已经预先具有输入、输出共两个属性符；建立从成品CP构件类型符的待工数目属性符向成品完工算符的输入属性符的传值符；建立从成品完工算符的输出属性符向成品CP构件类型符的完工数目属性符的传值符；

[0310] 算法编辑器依次接收并响应实际系统建模环境送来的操作信息，并完成相应操作：添加一个第减法算符，简称成品待工清零算符；建立从成品CP构件类型符的待工数目属性符向成品待工清零算符的被减数属性符的传值符；建立从所涉构件类型符的待工数目属性符向成品待工清零算符的减数属性符的传值符；建立从成品待工清零算符的差数属性符向成品CP构件类型符的待工数目属性符的传值符；

[0311] 至此，成品装配算法视图编辑完毕。同时，本实施例中所有的算法视图编辑完毕。

[0312] 流程编辑

[0313] 接下来，将详细说明各个流程视图的构造过程。

[0314] 业务主过程流程编辑

[0315] 图21为完成后的业务管理YWGL构件类型符的业务主过程流程视图，其构造过程如

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下：

[0316] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将业务管理YWGL构件类型符设置为所涉构件类型符；接口编辑器接收并响应实际系统建模环境送来的操作信息，将业务主过程功能符设置为所涉功能符；为表述方便，我们根据功能名称将业务主过程功能符的流程视图简称为业务主过程流程视图；其他功能符的流程视图依此类推，不再赘述；

[0317] 见图21，层级面板接收实际系统建模环境送来的选中业务管理YWGL构件类型符的操作信息，向层级处理器发出将业务管理YWGL构件类型设置为所涉构件类型的指令；层级处理器响应前述指令将业务管理YWGL构件类型设置为所涉构件类型；接口面板接收实际系统建模环境送来的选中业务主过程功能符的操作信息，将业务主过程功能符设置为所涉功能符，向接口处理器发出将业务主过程功能设置为所涉功能的指令；接口处理器响应前述指令将业务主过程功能设置为所涉功能；为表述方便，我们根据功能名称将业务主过程功能符的流程视图简称为业务主过程流程视图；其他功能符的流程视图依此类推，不再赘述；

[0318] 流程编辑器为业务主过程流程视图创建一个省缺的顺序活动符作为根活动符，并自动设置该根活动符为所涉活动符；所述顺序活动符是一个具有顺序执行内部活动功能的算元活动符；所述顺序活动符具有开始节点、结束节点，并在开始节点和结束节点之间，顺序提供多个节点以便添加其他活动符；为叙述方便，根据流程视图名称称其根活动符为业务主过程根活动符；需要说明的是，流程编辑器为每个流程视图都会创建一个根活动符，根活动符命名依此类推，不再赘述；

[0319] 流程面板接收实际系统建模环境送来的添加一个基于所涉构件类型的业务配置功能符的活动符的操作信息；为了叙述简便，根据该活动符所依托的功能名称简称为业务配置活动符，后续其他活动符依此类推；流程面板响应前述操作信息向流程处理器相应发出向所涉活动中添加一个业务配置活动的指令，流程处理器响应前述指令在业务主过程根活动中添加一个业务配置活动；流程面板可视显示流程视图；

[0320] 相似地，流程编辑器接收并响应实际系统建模环境送来的操作信息，在业务主过程根活动符中添加一个循环活动符；所述的循环活动符是一个具有循环功能的算元活动符；所述的循环活动符内部包含一个节点序列，每一个节点可以容纳一个活动符；为叙述方便，称循环活动符的节点序列为循环序列；为了区别，称所述循环活动符为业务运转循环活动符；

[0321] 相似地，流程编辑器接收并响应实际系统建模环境送来的操作信息，在循环活动符的循环序列中加入一个基于所涉构件类型符的业务运行功能符的业务运行活动符；

[0322] 至此，业务主过程流程视图及业务主过程流程模型编辑完毕。

[0323] 业务配置流程编辑

[0324] 见图22，与业务主过程流程视图的构造过程相似，业务配置流程视图的构造过程如下：

[0325] 接口编辑器接收并响应实际系统建模环境送来的操作信息，将业务配置功能符设置为所涉功能符；

[0326] 流程编辑器接收并响应实际系统建模环境送来的操作信息，在业务配置根活动符中添加一个赋值算元活动符，简称为为序号清零赋值活动符；所述赋值算元活动符是一个

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具有赋值功能的算元活动符；

[0327] 流程编辑器接收并响应实际系统建模环境送来操作信息，在业务配置根活动符中添加一个创建实例算元活动符，简称为生产创建实例活动符；所述创建实例算元活动符是一个表示具有创建构件类型符功能的算元活动符；

[0328] 流程编辑器接收并响应实际系统建模环境送来操作信息，在业务配置根活动符中添加一个遍历活动符，简称为生产配置遍历活动符；所述遍历活动符内部包含一个节点序列，每个节点容纳一个活动符；所述遍历活动符是指对确定的构件类型符的各个构件类型符均执行一遍节点序列的逻辑活动符；

[0329] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产配置遍历活动符的遍历序列中添加一个加一活动符，简称为生产序号加一活动符；所述加一活动符是指预制的具有使整数值加一功能的算元活动符；

[0330] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产配置遍历活动符的遍历序列中添加一个赋值活动符，简称为生产序号赋值活动符；

[0331] 流程编辑器接收并响应实际系统建模环境送来操作信息，在业务配置根活动符中添加一个创建实例算元活动符，简称为采购创建实例活动符；

[0332] 流程编辑器接收并响应实际系统建模环境送来操作信息，在业务配置根活动符中添加一个遍历活动符，简称为采购配置遍历活动符；

[0333] 流程编辑器接收并响应实际系统建模环境送来操作信息，在采购配置遍历活动符的遍历序列中添加一个加一活动符，简称为采购序号加一活动符；

[0334] 流程编辑器接收并响应实际系统建模环境送来操作信息，在采购配置遍历活动符的遍历序列中添加一个赋值活动符，简称为采购序号赋值活动符；

[0335] 流程编辑器接收并响应实际系统建模环境送来操作信息，在业务配置根活动符中添加一个赋值算元活动符，简称为销售序号清零赋值活动符；

[0336] 流程编辑器接收并响应实际系统建模环境送来操作信息，在业务配置根活动符中添加一个创建实例算元活动符，简称为销售创建实例活动符；

[0337] 流程编辑器接收并响应实际系统建模环境送来操作信息，在业务配置根活动符中添加一个遍历活动符，简称为销售配置遍历活动符；

[0338] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售配置遍历活动符的遍历序列中添加一个加一活动符，简称为销售序号加一活动符；

[0339] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售配置遍历活动符的遍历序列中添加一个赋值活动符，简称为销售序号赋值活动符；

[0340] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售配置遍历活动符的遍历序列中添加一个遍历活动符，简称为销售生产配置遍历活动符；

[0341] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售生产配置遍历活动符的遍历序列中添加一个相同比较活动符，简称为销售生产配置比较活动符；所述的相同比较活动符是一个预制的具有比较两个输入项是否相同的功能的算元活动符；

[0342] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售生产配置遍历活动符的遍历序列中添加一个条件活动符，简称为销售生产配置条件活动符；所述的条件活动符是一个预制的具有条件选择功能符的逻辑活动符；

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[0343] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售生产配置条件活动符的为真分支中添加一个赋值活动符，简称为销售生产赋值活动符；

[0344] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售配置遍历活动符的遍历序列中添加一个遍历活动符，简称为销售采购配置遍历活动符；

[0345] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售采购配置遍历活动符的遍历序列中添加一个相同比较活动符，简称为销售采购配置比较活动符；

[0346] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售采购配置遍历活动符的遍历序列中添加一个条件活动符，简称为销售采购配置条件活动符；

[0347] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售采购配置条件活动符的为真中添加一个赋值活动符，简称为销售采购配置活动符；

[0348] 至此，业务配置流程视图编辑完毕。

[0349] 业务运行流程编辑

[0350] 见图23，接口编辑器接收并响应实际系统建模环境送来的操作信息，将业务运行功能符设置为所涉功能符；

[0351] 流程编辑器并响应接收实际系统建模环境送来的操作信息，在业务运行根活动符中添加一个遍历活动符，简称为生产运行遍历活动符；

[0352] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产运行遍历活动符的遍历序列中添加一个基于生产管理SCGL构件类型符的生产计划功能符的生产计划活动符；

[0353] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产运行遍历活动符的遍历序列中添加一个基于生产管理SCGL构件类型符的生产实施功能符的生产实施活动符；

[0354] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产运行遍历活动符的遍历序列中添加一个基于生产管理SCGL构件类型符的生产交货功能符的生产交货活动符；

[0355] 流程编辑器接收并响应实际系统建模环境送来操作信息，在业务运行根活动符中添加一个遍历活动符，简称为销售运行遍历活动符；

[0356] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售运行遍历活动符的遍历序列中添加一个基于采购管理CGGL构件类型符的采购实施功能符的采购实施活动符；

[0357] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售运行遍历活动符的遍历序列中添加一个基于采购管理CGGL构件类型符的采购交货功能符的采购交货活动符；

[0358] 流程编辑器接收并响应实际系统建模环境送来操作信息，在业务运行根活动符中添加一个遍历活动符，简称为采购运行遍历活动符；

[0359] 流程编辑器接收并响应实际系统建模环境送来操作信息，在采购运行遍历活动符的遍历序列中添加一个遍历活动符，简称称为销售生产运行遍历活动符；

[0360] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售生产运行遍历活动符的遍历序列中添加一个相同比较活动符，简称为销售生产运行比较活动符；

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[0361] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售生产运行遍历活动符的遍历序列中添加一个条件活动符，简称为销售生产运行条件活动符；

[0362] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售生产运行条件活动符的为真分支中添加一个基于销售管理XSGL构件类型符的销售功能符的销售收货活动符，简称生产销售收货活动符；

[0363] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售生产运行条件活动符的为真分支中添加一个基于销售管理XSGL构件类型符的销售出货功能符的销售出货活动符，简称生产销售出货活动符；

[0364] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售生产运行条件活动符的为真分支中添加一个基于销售管理XSGL构件类型符的内部订货功能符的内部订货活动符，简称生产内部订货活动符；

[0365] 流程编辑器接收并响应实际系统建模环境送来操作信息，在采购运行遍历活动符的遍历序列中添加一个遍历活动符，简称为销售采购运行遍历活动符；

[0366] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售采购运行遍历活动符的遍历序列中添加一个相同比较活动符，简称为销售采购运行比较活动符；

[0367] 流程编辑器接收并响应实际系统建模环境送来操作信息在销售采购运行遍历活动符的遍历序列中添加一个条件活动符，简称为销售采购运行条件活动符；

[0368] 流程编辑器接收并响应实际系统建模环境送来操作信息，销售采购运行条件活动符的为真分支中添加一个基于销售管理XSGL构件类型符的销售收货功能符的销售收货活动符，简称为采购销售收货活动符；

[0369] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售采购运行条件活动符的为真分支中添加一个基于销售管理XSGL构件类型符的销售出货功能符的销售出货活动符，简称为采购销售出货活动符；

[0370] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售采购运行条件活动符的为真分支中添加一个基于销售管理XSGL构件类型符的内部订货功能符的内部订货活动符，简称为采购内部订货活动符；

[0371] 至此，业务运行视图编辑完毕。

[0372] 内部订货流程编辑

[0373] 见图24，层级编辑器接收并响应实际系统建模环境送来的操作信息，将销售管理XSGL构件类型符设置为所涉构件类型符；接口编辑器接收并响应实际系统建模环境送来的操作信息，将内部订货功能符设置为所涉功能符；

[0374] 流程编辑器接收并响应实际系统建模环境送来的操作消息，在内部订货根活动符中添加一个加法活动符，简称为合同统计活动符；所述加法活动符是一个具有加法功能的算元活动符；

[0375] 流程编辑器接收并响应实际系统建模环境送来操作信息，在内部订货根活动符中添加一个加法活动符，简称为需求统计活动符；

[0376] 流程编辑器接收并响应实际系统建模环境送来操作信息，在内部订货根活动符中添加一个减法活动符，简称为订货统计活动符；所述减法活动符是一个基于减法算符的减法功能的算元活动符；

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[0377] 至此，内部订货流程视图编辑完毕。

[0378] 销售出货流程编辑

[0379] 见图25，接口编辑器接收并响应实际系统建模环境送来的操作信息，将销售出货功能符设置为所涉功能符；

[0380] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售出货根活动符中添加一个加法活动符，简称为出货统计活动符；

[0381] 流程编辑器接收并响应实际系统建模环境送来操作信息，在销售出货根活动符中添加一个减法活动符，简称为存货统计活动符；所述减法活动符是一个基于减法算符的减法功能的算元活动符；

[0382] 至此，销售出货流程视图编辑完毕。

[0383] 销售收货流程编辑

[0384] 见图26，接口编辑器接收并响应实际系统建模环境送来的操作信息，将销售收货功能符设置为所涉功能符；

[0385] 流程编辑器接收并响应实际系统建模环境送来的操作消息，在销售收货根活动符中添加一个加法活动符，简称为收货统计活动符；

[0386] 至此，销售收货流程视图编辑完毕。

[0387] 生产计划流程编辑

[0388] 见图27，层级编辑器接收并响应实际系统建模环境送来的操作信息，将生产管理SCGL构件类型符设置为所涉构件类型符；接口编辑器接收并响应实际系统建模环境送来的操作信息，将生产计划功能符设置为所涉功能符；

[0389] 流程编辑器接收实际系统建模环境送来的操作消息，在生产计划根活动符中添加一个乘法活动符，简称为主件待工统计活动符；所述乘法活动符是一个具有乘法功能的算元活动符；

[0390] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产计划根活动符中添加一个乘法活动符，简称为零件待工统计活动符；

[0391] 至此，生产计划流程视图编辑完毕。

[0392] 生产实施流程编辑

[0393] 见图28，接口编辑器接收并响应实际系统建模环境送来的操作信息，将生产实施功能符设置为所涉功能符；

[0394] 流程编辑器接收并响应实际系统建模环境送来的操作信息，在生产实施根活动符中添加一个基于主件ZJ构件类型符的主件加工功能符的主件加工活动符；

[0395] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产实施根活动符中添加一个基于主件ZJ构件类型符的主件交货功能符的主件交货活动符；

[0396] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产实施根活动符中添加一个基于零件LJ构件类型符的零件加工功能符的零件加工活动符；

[0397] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产实施根活动符中添加一个基于零件LJ构件类型符的零件交货功能符的零件交货活动符；

[0398] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产实施根活动符中添加一个基于成品CP构件类型符的配件接收功能符的配件接收活动符；

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[0399] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产实施根活动符中添加一个基于成品CP构件类型符的成品装配功能符的成品装配活动符；

[0400] 至此，实现生产实施功能符的生产实施流程视图编辑完毕。

[0401] 生产交货流程编辑

[0402] 见图29，接口编辑器接收并响应实际系统建模环境送来的操作信息，将生产交货功能符设置为所涉功能符；

[0403] 流程编辑器接收并响应实际系统建模环境送来的操作消息，在生产交货根活动符中添加一个赋值活动符，简称为完工交货活动符；

[0404] 流程编辑器接收并响应实际系统建模环境送来操作信息，在生产交货根活动符中添加一个加法活动符，简称为交货总量统计活动符；

[0405] 至此，生产交货流程视图编辑完毕。与此同时，本实施例的所有流程视图编辑完毕。

[0406] 传输编辑

[0407] 接下来，将详细说明各个活动符的传输视图的构造过程；

[0408] 业务配置传输编辑

[0409] 业务配置活动符不需进行数据交换，故业务配置传输视图内容为空；

[0410] 业务运转循环传输编辑

[0411] 见图30，层级面板接收实际系统建模环境送来的选中业务管理YWGL构件类型符的操作信息，向层级处理器发出将业务管理YWGL构件类型设置为所涉构件类型的指令；层级处理器响应前述指令将业务管理YWGL构件类型设置为所涉构件类型；层级面板刷显示新层级视图，将业务管理YWGL构件类型符设置为所涉构件类型符；接口面板接收实际系统建模环境送来的选中业务主过程功能符的操作信息，向接口处理器发出将业务主过程功能设置为所涉功能的指令；接口处理器响应前述指令将业务主过程功能设置为所涉功能；接口面板可视显示接口视图将业务主过程功能符设置为所涉功能符；流程面板接收实际系统建模环境送来的选中业务运转循环活动符的操作信息，向流程处理器发出将业务运转循环活动设置为所涉活动的指令；流程处理器响应前述命令将业务运转循环活动设置为所涉活动；流程面板刷新流程视图显示，将业务运转循环活动符设置为所涉活动符；传输编辑器以所涉活动符为对象构造传输视图，形成业务运转循环活动符的传输视图；为了简便起见，根据活动符的名称将业务运转循环活动符的传输视图简称为业务运转循环传输视图，其他传输视图依此类比，不再赘述；

[0412] 传输面板接收实际系统建模环境送来的建立一个从所涉构件的生产运转态属性符到所涉活动符的循环条件属性符的传输符的操作信息；传输面板响应前述操作信息向传输处理器发出建立一个从业务管理YWGL构件类型的生产运转态属性到业务运转循环活动的循环条件属性的传输的指令；传输处理器响应前述指令建立一个从业务管理YWGL构件类型的生产运转属性到业务运转循环活动的循环条件属性的传输；传输面板可视显示传输视图，建立一个从业务管理YWGL构件类型符的生产运转属性符到业务运转循环活动符的循环条件属性符的传输符；所述业务运转循环活动符的循环条件属性符是指业务运转循环活动符所依托的循环算元的条件属性符的简称；后续其他活动符的属性符的含义依此类推，不再赘述；

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[0413] 业务运行传输编辑

[0414] 空。

[0415] 序号清零赋值传输编辑

[0416] 见图31，流程编辑器接收并响应实际系统建模环境送来的操作信息，将序号清零赋值活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成序号清零赋值传输视图；

[0417] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的常数零属性符到序号清零赋值活动符的输入属性符的输入传输符；所述序号清零赋值活动符具有一个输入属性符和一个输出属性符；

[0418] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从序号清零赋值活动符的输出属性符到业务管理YWGL构件类型符的产品序号属性符的输出传输符；

[0419] 生产创建实例传输编辑

[0420] 见图32，流程编辑器接收并响应实际系统建模环境送来的操作信息，将生产创建实例活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成生产创建实例传输视图；

[0421] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的名称到生产创建实例活动符的类型属性符的输入传输符；所述生产创建实例活动符具有一个类型属性符和实例数量属性符；

[0422] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的生产品种数目属性符到生产创建实例活动符的实例数量属性符的输入传输符；

[0423] 生产配置遍历传输编辑

[0424] 见图33，流程编辑器接收并响应实际系统建模环境送来的操作信息，将生产配置遍历活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成生产配置遍历传输视图；

[0425] 传输符编辑器接收并响应从实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的名称到生产配置遍历活动符的类型属性符的输入传输符；所述生产配置遍历活动符具有一个类型属性符，指明被遍历的构件类型符；

[0426] 生产序号加一传输编辑

[0427] 见图34，流程编辑器接收并响应实际系统建模环境送来的操作信息，将生产序号加一活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成生产序号加一传输视图；

[0428] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的产品序号属性符到生产序号加一活动符的输入属性符的输入传输符；所述生产序号加一活动符具有一个输入属性符和一个输出属性符；

[0429] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产序号加一活动符的输出属性符到业务管理YWGL构件类型符的产品序号属性符的输出传输符；

[0430] 生产序号赋值传输编辑

[0431] 见图35，流程编辑器接收并响应实际系统建模环境送来的操作信息，将生产序号

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赋值活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成生产序号赋值传输视图；

[0432] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的产品序号属性符到生产序号赋值活动符的输入属性符的输入传输符；

[0433] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产序号赋值活动符的输出属性符到生产管理SCGL构件类型符的产品序号属性符的输出传输符；

[0434] 采购创建实例传输编辑

[0435] 见图36，流程编辑器接收并响应实际系统建模环境送来的操作信息，将采购创建实例活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成采购创建实例传输视图；

[0436] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从采购管理CGGL构件类型符的名称到采购创建实例活动符的类型属性符的输入传输符；所述采购创建实例活动符具有一个类型属性符和实例数量属性符；

[0437] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的采购品种数目属性符到采购创建实例活动符的实例数量属性符的输入传输符；

[0438] 采购配置遍历传输编辑

[0439] 见图37，流程编辑器接收并响应实际系统建模环境送来的选中采购配置遍历活动符的操作信息，将采购配置遍历活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成采购配置遍历传输视图；

[0440] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从采购管理CGGL构件类型符的名称到采购配置遍历活动符的类型属性符的输入传输符；

[0441] 采购序号加一传输编辑

[0442] 见图38，流程编辑器接收并响应实际系统建模环境送来的操作信息，将采购序号加一活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成采购序号加一传输视图；

[0443] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的产品序号属性符到采购序号加一活动符的输入属性符的输入传输符；所述采购序号加一活动符具有一个输入属性符和一个输出属性符；

[0444] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从采购序号加一活动符的输出属性符到业务管理YWGL构件类型符的产品序号属性符的输出传输符；

[0445] 采购序号赋值传输编辑

[0446] 见图39，流程编辑器接收并响应实际系统建模环境送来的操作信息，将采购序号赋值活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成采购序号赋值传输视图；

[0447] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的产品序号属性符到采购序号赋值活动符的输入属性符的输入传输符；

[0448] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从采购序号赋值活动符的输出属性符到采购管理CGGL构件类型符的产品序号属性符的输出传输符；

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[0449] 销售序号清零赋值传输编辑

[0450] 见图40，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售序号清零赋值活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售序号清零赋值传输视图；

[0451] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的常数零属性符到销售序号清零赋值活动符的输入属性符的输入传输符；所述销售序号清零赋值活动符具有一个输入属性符和一个输出属性符；

[0452] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售序号清零赋值活动符的输出属性符到业务管理YWGL构件类型符的产品序号属性符的输出传输符；

[0453] 销售创建实例传输编辑

[0454] 见图41，流程编辑器接收并响应实际系统建模环境送来的操作信息，将业务配置功能符设置为所涉功能符；流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售创建实例活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售创建实例传输视图；

[0455] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的名称到销售创建实例活动符的类型属性符的输入传输符；

[0456] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的销售品种数目属性符到销售创建实例活动符的实例数量属性符的输出传输符；

[0457] 销售配置遍历传输编辑

[0458] 见图42，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售配置遍历活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售配置遍历传输视图；

[0459] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的名称到销售配置遍历活动符的类型属性符的输入传输符；

[0460] 销售序号加一传输编辑

[0461] 见图43，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售序号加一活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售序号加一传输视图；

[0462] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的产品序号属性符到销售序号加一活动符的输入属性符的输入传输符；所述销售序号加一活动符具有一个输入属性符和一个输出属性符；

[0463] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售序号加一活动符的输出属性符到业务管理YWGL构件类型符的产品序号属性符的输出传输符；

[0464] 销售序号赋值传输编辑

[0465] 见图44，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售序号赋值活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售序号赋值传输视图；

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[0466] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的产品序号属性符到销售序号赋值活动符的输入属性符的输入传输符；

[0467] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售序号赋值活动符的输出属性符到销售管理XSGL构件类型符的产品序号属性符的输出传输符；

[0468] 销售生产配置遍历传输编辑

[0469] 见图45，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售生产配置遍历活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售生产配置遍历传输视图；

[0470] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的名称到销售生产配置遍历活动符的类型属性符的输入传输符；所述销售生产配置遍历活动符具有一个类型属性符，指明被遍历的构件类型符；

[0471] 销售生产配置比较传输编辑

[0472] 见图46，流程编辑器接收并响应实际系统建模环境送来的操作信息，将业务配置功能符设置为所涉功能符；流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售生产配置比较活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售生产配置比较传输视图；

[0473] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的产品序号属性符到销售生产配置比较活动符的被比较属性符的输入传输符；所述销售生产配置比较活动符具有两个输入属性符和一个结果属性符；

[0474] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的产品序号属性符到销售生产配置比较活动符的比较属性符的输入传输符；

[0475] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售生产配置比较活动符的结果属性符到业务管理YWGL构件类型符的比较结果属性符的输出传输符；

[0476] 销售生产配置条件传输编辑

[0477] 见图47，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售生产配置条件活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售生产配置条件传输视图；

[0478] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的比较结果属性符到销售生产配置条件活动符的状态属性符的输入传输符；所述条件活动符有一个用作选择判据的输入；

[0479] 销售生产赋值传输编辑

[0480] 见图48，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售生产赋值活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售生产赋值传输视图；

[0481] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的产品名称属性符到销售生产赋值活动符的输入属性符的输入传输符；

[0482] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售生

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产赋值活动符的输出属性符到销售管理XSGL构件类型符的产品名称属性符的输出传输符；

[0483] 销售采购配置遍历传输编辑

[0484] 见图49，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售采购配置遍历活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售采购配置遍历传输视图；

[0485] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从采购管理CGGL构件类型符的名称到销售采购配置遍历活动符的类型属性符的输入传输符；

[0486] 销售采购配置比较传输编辑

[0487] 见图50，流程编辑器接收并响应实际系统建模环境送来的操作信息，将业务配置功能符设置为所涉功能符；流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售采购配置比较活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售采购配置比较传输视图；

[0488] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的产品序号属性符到销售采购配置比较活动符的被比较属性符的输入传输符；所述销售采购配置比较活动符具有两个输入属性符和一个结果属性符；

[0489] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从采购管理CGGL构件类型符的产品序号属性符到销售采购配置比较活动符的比较属性符的输入传输符；

[0490] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售采购配置比较活动符的结果属性符到业务管理YWGL构件类型符的比较结果属性符的输出传输符；

[0491] 销售采购配置条件传输编辑

[0492] 见图51，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售采购配置条件活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售采购配置条件传输视图；

[0493] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的比较结果属性符到销售采购配置条件活动符的状态属性符的输入传输符；所述条件活动符有一个用作选择判据的状态属性；

[0494] 销售采购配置传输编辑

[0495] 见图52，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售采购配置活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售采购配置传输视图；

[0496] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从采购管理CGGL构件类型符的产品名称属性符到销售采购配置活动符的输入属性符的输入传输符；

[0497] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售采购配置活动符的输出属性符到销售管理XSGL构件类型符的产品名称属性符的输出传输符；

[0498] 生产运行遍历传输编辑

[0499] 见图53，接口编辑器接收并响应实际系统建模环境送来的操作信息，将业务运行功能符设置为所涉功能符；流程编辑器接收并响应实际系统建模环境送来的操作信息，将

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生产运行遍历活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成生产运行遍历传输视图；

[0500] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的名称到生产运行遍历活动符的类型属性符的输入传输符；

[0501] 生产计划传输编辑

[0502] 空。

[0503] 生产实施传输编辑

[0504] 空。

[0505] 生产交货传输编辑

[0506] 空。

[0507] 采购运行遍历传输编辑

[0508] 见图54，流程编辑器接收并响应实际系统建模环境送来的操作信息，将采购运行遍历活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成采购运行遍历传输视图；

[0509] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从采购管理CGGL构件类型符的名称到采购运行遍历活动符的类型属性符的输入传输符；

[0510] 采购实施传输编辑

[0511] 空。

[0512] 采购交货传输编辑

[0513] 空。

[0514] 销售运行遍历传输编辑

[0515] 见图55，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售运行遍历活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售运行遍历传输视图；

[0516] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的名称到销售运行遍历活动符的类型属性符的输入传输符；

[0517] 销售生产运行遍历传输编辑

[0518] 见图56，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售生产运行遍历活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售生产运行遍历传输视图；

[0519] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的名称到销售生产运行遍历活动符的类型属性符的输入传输符；

[0520] 销售生产运行比较传输编辑

[0521] 见图57，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售生产运行比较活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售生产运行比较传输视图；

[0522] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的产品序号属性符到销售生产运行比较活动符的被比较属性符的输入传输符；

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[0523] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，一个从生产管理SCGL构件类型符的产品序号属性符到销售生产运行比较活动符的比较属性符的输入传输符；

[0524] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售生产运行比较活动符的结果属性符到业务管理YWGL构件类型符的比较结果属性符的输出传输符；

[0525] 销售生产运行条件传输编辑

[0526] 见图58，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售生产运行条件活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售生产运行条件传输视图；

[0527] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的比较结果属性符到销售生产运行条件活动符的状态属性符的输入传输符；

[0528] 生产销售收货传输编辑

[0529] 见图59，流程编辑器接收并响应实际系统建模环境送来的操作信息，将生产销售收货活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成生产销售收货传输视图；

[0530] 传输符编辑器接收实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的交货数量属性符到生产销售收货活动符的收货数量属性符的输入传输符；

[0531] 生产销售出货传输编辑

[0532] 空。

[0533] 生产内部订货传输编辑

[0534] 见图60，流程编辑器接收并响应实际系统建模环境送来的操作信息，将生产内部订货活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成生产内部订货传输视图；

[0535] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从内部订货活动符的订货数量属性符到生产管理SCGL构件类型符的订货数量属性符的输出传输符；

[0536] 销售采购运行遍历传输编辑

[0537] 见图61，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售采购运行遍历活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售采购运行遍历传输视图；

[0538] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从采购管理CGGL构件类型符的名称到销售采购运行遍历活动符的类型属性符的输入传输符；

[0539] 销售采购运行比较传输编辑

[0540] 见图62，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售采购运行比较活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售采购运行比较传输视图；

[0541] 传输符编辑器接收实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的产品序号属性符到销售采购运行比较活动符的被比较属性符的传输符；所述

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销售采购运行比较活动符具有两个输入属性符和一个结果属性符；

[0542] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从采购管理CGGL构件类型符的产品序号属性符到销售采购运行比较活动符的比较属性符的传输符；

[0543] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售采购运行比较活动符的结果属性符到业务管理YWGL构件类型符的比较结果属性符的输入传输符；

[0544] 销售采购运行条件传输编辑

[0545] 见图63，流程编辑器接收并响应实际系统建模环境送来的操作信息，将销售采购运行条件活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成销售采购运行条件传输视图；

[0546] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从业务管理YWGL构件类型符的比较结果属性符到销售采购运行条件活动符的状态属性符的输入传输符；

[0547] 采购销售收货传输编辑

[0548] 见图64，流程编辑器接收并响应实际系统建模环境送来的操作信息，将采购销售收货活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成采购销售收货传输视图；

[0549] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从采购管理CGGL构件类型符的交货数量属性符到采购销售收货活动符的收货数量属性符的输入传输符；

[0550] 采购销售出货传输编辑

[0551] 空。

[0552] 采购内部订货传输编辑

[0553] 见图65，流程编辑器接收并响应实际系统建模环境送来的操作信息，将采购内部订货活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成采购内部订货传输视图；

[0554] 传输符编辑器接收实际系统建模环境送来的操作信息，建立一个从采购内部订货活动符的订货数量属性符到采购管理CGGL构件类型符的待购数量属性符的输出传输符；

[0555] 合同统计传输编辑

[0556] 见图66，层级编辑器接收并响应实际系统建模环境送来的操作信息，将业务员管理构件类型符设置为所涉构件类型符；接口编辑器接收并响应实际系统建模环境送来的操作信息，将内部订货功能符设置为所涉功能符；流程编辑器接收并响应实际系统建模环境送来的操作信息，将合同统计活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成合同统计活动符的传输视图；

[0557] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从分销品FXP构件类型符的合同订量属性符到合同统计活动符的被加数属性符的输入传输符；所述合同统计活动符具有一个被加数属性符、加数属性符及和数属性符；

[0558] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从直销品ZXP构件类型符的合同订量属性符到合同统计活动符的加数属性符的输入传输符；

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[0559] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从合同统计活动符的和数属性符到销售管理XSGL构件类型符的合同订量属性符的输出传输符；

[0560] 需求统计传输编辑

[0561] 见图67，流程编辑器接收并响应实际系统建模环境送来的操作信息，将需求统计活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成需求统计活动符的传输视图；

[0562] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的最低存量属性符到需求统计活动符的被加数属性符的输入传输符；

[0563] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的合同订量属性符到需求统计活动符的加数属性符的输入传输符；

[0564] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从需求统计活动符的和数属性符到销售管理XSGL构件类型符的需求数量属性符的输出传输符；

[0565] 订货统计传输编辑

[0566] 见图68，流程编辑器接收并响应实际系统建模环境送来的操作信息，将订货统计活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成订货统计活动符的传输视图；

[0567] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL类型符的需求数量属性符到订货统计活动符的被减数属性符的输入传输符；所述订货统计活动符具有一个被减数属性符、减数属性符及差数属性符；

[0568] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的存货数量属性符到订货统计活动符的减数属性符的输入传输符；

[0569] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从订货统计活动符的差数属性符到销售管理XSGL构件类型符的订货数量属性符的输出传输符；

[0570] 出货统计传输编辑

[0571] 见图69，层级编辑器接收并响应实际系统建模环境送来的操作信息，将业务员管理构件类型符设置为所涉构件类型符；接口编辑器接收并响应实际系统建模环境送来的操作信息，将销售出货功能符设置为所涉功能符；流程编辑器接收并响应实际系统建模环境送来的操作信息，将出货统计活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成出货统计活动符的传输视图；

[0572] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从分销品FXP构件类型符的出货数量属性符到出货统计活动符的被加数属性符的输入传输符；

[0573] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从直销品ZXP构件类型符的出货数量属性符到出货统计活动符的加数属性符的输入传输符；

[0574] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从出货统计活动符的和数属性符到销售管理XSGL构件类型符的出货数量属性符的输出传输符；

[0575] 存货统计传输编辑

[0576] 见图70，流程编辑器接收并响应实际系统建模环境送来的操作信息，将存货统计活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成存货统计活动符的传输视图；

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[0577] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的存货数量属性符到存货统计活动符的被减数属性符的输入传输符；

[0578] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的出货数量属性符到存货统计活动符的减数属性符的输入传输符；

[0579] 相似地，传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从存货统计活动符的差数属性符到销售管理XSGL构件类型符的存货数量属性符的输出传输符；

[0580] 收货统计传输编辑

[0581] 见图71流程编辑器接收并响应实际系统建模环境送来的操作信息，将收货统计活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成收货统计活动符的传输视图；

[0582] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的存货数量属性符到收货统计活动符的被加数属性符的输入传输符；

[0583] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从销售管理XSGL构件类型符的收货数量属性符到收货统计活动符的加数属性符的输入传输符；

[0584] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从收货统计活动符的和数属性符到销售管理XSGL构件类型符的存货数量属性符的输出传输符；

[0585] 主件待工统计传输编辑

[0586] 见图72，层级编辑器接收并响应实际系统建模环境送来的操作信息，将业务管理YWGL构件类型符设置为所涉构件类型符；接口编辑器接收并响应实际系统建模环境送来的操作信息，将生产计划功能符设置为所涉功能符；流程编辑器接收并响应实际系统建模环境送来的操作信息，将主件待工统计活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成主件待工统计活动符的传输视图；

[0587] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的订货数量属性符到主件待工统计活动符的被乘数属性符的输入传输符；所述主件待工统计活动符具有一个被乘数属性符、乘数属性符及积数属性符；

[0588] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从成品CP构件类型符的单套主件数量属性符到主件待工统计活动符的乘数属性符的输入传输符；

[0589] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从主件待工统计活动符的积数属性符到主件ZJ构件类型符的待工数目属性符的输出传输符；

[0590] 零件待工统计传输编辑

[0591] 见图73，接口编辑器接收并响应实际系统建模环境送来的操作信息，将生产计划功能符设置为所涉功能符；流程编辑器接收并响应实际系统建模环境送来的操作信息，将零件待工统计活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成零件待工统计活动符的传输视图；

[0592] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的订货数量属性符到零件待工统计活动符的被乘数属性符的输入传输符；

[0593] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从成品CP

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构件类型符的单套零件数量属性符到零件待工统计活动符的乘数属性符的输入传输符；

[0594] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从零件待工统计活动符的积数属性符到零件LJ构件类型符的待工数目属性符的输出传输符；

[0595] 主件加工传输编辑

[0596] 空。

[0597] 主件交货传输编辑

[0598] 空。

[0599] 零件加工传输编辑

[0600] 空。

[0601] 零件交货传输编辑

[0602] 空。

[0603] 配件接收传输编辑

[0604] 见图74，接口编辑器接收并响应实际系统建模环境送来的操作信息，将生产实施功能符设置为所涉功能符；流程编辑器接收并响应实际系统建模环境送来的操作信息，将配件接收活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成配件接收活动符的传输视图；

[0605] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从主件ZJ构件类型符的交货数目属性符到配件接收活动符的主件收货量属性符的输入传输符；

[0606] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从零件LJ构件类型符的交货数目属性符到配件接收活动符的零件收货量属性符的输入传输符；

[0607] 成品装配传输编辑

[0608] 见图75，流程编辑器接收并响应实际系统建模环境送来的操作信息，将成品装配活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成成品装配活动符的传输视图；

[0609] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从成品装配活动符的完工数目属性符到生产管理SCGL构件类型符的完成数量属性符的输出传输符；

[0610] 完工交货传输编辑

[0611] 见图76，接口编辑器接收并响应实际系统建模环境送来的操作信息，将生产交货功能符设置为所涉功能符；流程编辑器接收并响应实际系统建模环境送来的操作信息，将完工交货活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成完工交货活动符的传输视图；

[0612] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的完成数量属性符到完工交货活动符的输入属性符的输入传输符；

[0613] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从完工交货活动符的输出属性符到生产管理SCGL构件类型符的交货数量属性符的输入传输符；

[0614] 交货总量统计传输编辑

[0615] 见图77，流程编辑器接收并响应实际系统建模环境送来的操作信息，将交货总量统计活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成交货总量统计活动符的传输视图；

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[0616] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的交货数量属性符到交货总量统计活动符的被加数属性符的输入传输符；

[0617] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从生产管理SCGL构件类型符的交货总量属性符到交货总量统计活动符的加数属性符的输入传输符；

[0618] 传输符编辑器接收并响应实际系统建模环境送来的操作信息，建立一个从交货总量统计活动符的和数属性符到生产管理SCGL构件类型符的交货总量属性符的输出传输符；

[0619] 至此，交货总量统计传输视图编辑完毕；

[0620] 与此同时，本实施例中由层级视图、接口视图、算法视图、流程视图和传输视图及相应模型构成的以业务管理YWGL为主题的系统视图系统模型编辑完毕。

[0621] 本实施例演示了一个不掌握现有复杂系统建模语言、不掌握计算机程序语言的普通管理人员，无须依赖专业建模人员和程序开发人员，如何独立地将自己关于业务管理的构想，在相对短的时间内利用本发明编辑出一个具有运算性的业务管理系统视图及系统模型。不但编辑过程清晰，编辑方法简单，而且，模型质量明显较高，花费的时间明显较少。

[0622] 与该同一个管理人员与专业建模人员或程序开发人员的协同开发业务管理系统视图及系统模型的模式相比，该管理人员利用本发明独立开发业务管理视图及系统模型，取得了如下的明显效果：

[0623] (1)质量高：编辑完成的系统模型是该管理人员心目中所需要的，避免了专业建模人员或程序开发人员与该管理人员对业务管理系统视图及系统模型的理解偏差；

[0624] (2)时间短：由于节省了管理人员与专业建模人员或程序开发人员之间的繁杂沟通，整个建模花费的时间周期缩短到原来的1/5，大大地节约了时间、精力和经费；

[0625] 实施例B：飞机座舱训练系统模型编辑

[0626] 本实施例将对实现如下意图的飞机座舱训练系统进行建模：

[0627] (1)明确区分B21混合气比控制手柄、B22磁电机电门、B23油门、B24电门面板、B25转速表、B26燃油流量表、B27滑油压力表七大模块；

[0628] (2)开车功能：遵照飞机开车标准程序，依次启动B21混合气比控制手柄、B22磁电机电门、B23油门、B24电门面板、B25转速表、B26燃油流量表和B27滑油压力表；

[0629] (3)停车功能：遵照飞机停车标准程序，依次关闭B21混合气比控制手柄、B22磁电机电门、B23油门、B24电门面板、B25转速表、B26燃油流量表、B27滑油压力表。

[0630] 下面给出构造本实施例的系统视图的详细过程。

[0631] 层级编辑

[0632] 图78给出了完成之后的飞机座舱训练系统视图的层级视图，下面给出构造本实施例的层级视图的详细过程：

[0633] 在建模开始前的初始状态，层级编辑器就为飞机座舱训练系统视图省缺创建一个构件类型符作为层级树的根节点，该根节点上的构件类型符简称为根构件类型符；

[0634] 层级面板接收从实际系统建模环境送来的选中根构件类型符的操作信息，向层级处理器发出选中根构件类型的指令；层级处理器响应前述指令将层级模型的根构件类型设置为所涉构件类型；层级面板接收实际系统建模环境送来的将所涉构件类型符名称修改为“B11飞机发动机操作”字样的操作信息，向层级处理器发出将所涉构件类型的名称修改为

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“B11飞机发动机操作”字样的指令；层级处理器响应前述指令，将根构件类型的名称修改为“B11飞机发动机操作”；根据构件类型名称将根构件类型符称为B11飞机发动机操作构件类型符，其他构件类型符依此类推，后面不再赘述；层级接收面板实际系统建模环境送来的将所涉构件类型实例数量设置为1的操作信息，向层级处理器发出将所涉构件类型实例数量设置为1的指令，层级处理器响应前述指令，将B11飞机发动机操作构件类型的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0635] 层级面板接收实际系统建模环境送来的添加子构件类型符的操作信息，向层级处理器发出为所涉构件添加子构件类型的指令；层级处理器响应前述指令为B11飞机发动机操作构件类型添加一个子构件类型；层级处理器将前述子构件类型设置为所涉构件类型；层级面板以层级视图对层级模型进行可视显示，并同时将前述子构件类型符设置为所涉构件类型符；层级面板接收从实际系统建模环境送来的将所涉构件类型符的名称修改为“B21混合气比控制手柄”字样的操作信息，向层级处理器发送将所涉构件类型的名称修改为“B21混合气比控制手柄”的指令；层级处理器响应前述指令将所涉构件类型的名称修改为“B21混合气比控制手柄”；层级面板以层级视图对层级模型进行可视显示；层级接收面板实际系统建模环境送来的将所涉构件类型实例数量设置为1的操作信息，向层级处理器发出将所涉构件类型实例数量设置为1的指令，层级处理器响应前述指令，将B21混合气比控制手柄构件类型的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0636] 与添加B21混合气比控制手柄构件类型符的步骤相似，层级编辑器接收并响应实际系统建模环境送来的操作信息为B11飞机发动机操作构件类型符添加一个B22磁电机电门构件类型符作为子构件类型符，实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0637] 层级编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：将B11飞机发动机操作构件类型符设置为所涉构件类型符；为B11飞机发动机操作构件类型符添加一个子构件类型符；将前述子构件类型符的名称修改为“B23油门”；将B23油门构件类型符的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0638] 层级编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：将B11飞机发动机操作构件类型符设置为所涉构件类型符；为B11飞机发动机操作构件类型符添加一个子构件类型符；将前述子构件类型符的名称修改为“B24电门面板”；将B24电门面板构件类型符的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0639] 层级编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：将B11飞机发动机操作构件类型符设置为所涉构件类型符；为B11飞机发动机操作构件类型符添加一个子构件类型符；将前述子构件类型符的名称修改为“B25转速表”；将B25转速表构件类型符的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0640] 层级编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：将B11飞机发动机操作构件类型符设置为所涉构件类型符；为B11飞机发动机操作构件类型符添加一个子构件类型符；将前述子构件类型符的名称修改为“B26燃油流量表”；将B26燃油流量表构件类型符的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

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[0641] 层级编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：将B11飞机发动机操作构件类型符设置为所涉构件类型符；为B11飞机发动机操作构件类型符添加一个子构件类型符；将前述子构件类型符的名称修改为“B27滑油压力表”；将B27滑油压力表构件类型符的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0642] 层级编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：将B24电门面板构件类型符设置为所涉构件类型符；为B24电门面板构件类型符添加一个子构件类型符；将前述子构件类型符的名称修改为“B31燃油泵电门”；将B31燃油泵电门构件类型符的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0643] 层级编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：将B24电门面板构件类型符设置为所涉构件类型符；为B24电门面板构件类型符添加一个子构件类型符；将前述子构件类型符的名称修改为“B32着陆灯”；将B32着陆灯构件类型符的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0644] 层级编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：将B24电门面板构件类型符设置为所涉构件类型符；为B24电门面板构件类型符添加一个子构件类型符；将前述子构件类型符的名称修改为“B33航行灯”；将B33航行灯构件类型符的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0645] 层级编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：将B25转速表构件类型符设置为所涉构件类型符；为B25转速表构件类型符添加一个子构件类型符；将前述子构件类型符的名称修改为“B34指针”；将B34指针构件类型符的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0646] 层级编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：将B25转速表构件类型符设置为所涉构件类型符；为B25转速表构件类型符添加一个子构件类型符；将前述子构件类型符的名称修改为“B35表盘”；将B35表盘构件类型符的构件实例数量设置为1；层级面板以层级视图对层级模型进行可视显示；

[0647] 至此，本实施例的层级视图编辑完成。

[0648] 接口编辑

[0649] 接下来，将介绍层级视图中各个构件类型符的接口视图的构造过程。

[0650] B11飞机发动机操作接口编辑

[0651] 图79给出完成之后的B11飞机发动机操作构件类型符的接口视图，根据构件类型符的名称简称为B11飞机发动机操作接口视图，其他接口视图依此类推。B11飞机发动机操作接口视图的构造过程如下：

[0652] 层级面板接收从实际系统建模环境从来的选中B11飞机发动机操作构件类型符的操作信息，向层级处理器发出选中B11飞机发动机操作构件类型的指令，层级处理器响应前述指令将B11飞机发动机操作构件类型设置为所涉构件类型；层级面板将B11飞机发动机操作构件类型符设置成为所涉构件类型符并可视显示层级视图；

[0653] 接口面板接收从实际系统建模环境送来的添加属性符的操作消息，向接口处理器发出为所涉构件类型添加属性的指令；接口处理器响应前述指令为B11飞机发动机操作构件类型添加一个新属性，并将新属性设置为所涉属性；接口面板刷新接口视图时为B11飞机

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发动机操作构件类型符添加一个新属性符，并将将前述新属性符设置为所涉属性符；接口面板接收从实际系统建模环境送来的将所涉属性符的数据类型修改为bool类型的操作信息，向接口处理器发出将所涉属性的数据类型修改为bool类型的指令；接口处理器响应前述指令将所涉属性的数据类型修改为bool类型；接口面板接收从实际系统建模环境送来的将所涉属性符的属性名称修改为“开车状态”字样的操作信息，向接口处理器发出将所涉属性符的属性名称修改为“开车状态”字样的指令，接口处理器响应前述操作命令将所涉属性的属性名称修改为开车状态；前述属性名称为开车状态的属性简称为开车状态属性；后续属性符依此类推，不再赘述；接口面板接收从实际系统建模环境送来的将所涉属性符的属性值设置为false的操作信息，向接口处理器发出将所涉属性值设置为false的指令；接口处理器响应前述指令将开车状态属性的属性值设置为false；接口面板以接口视图的方式可视显示B11飞机发动机操作接口模型；

[0654] 相似地，接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为B11飞机发动机操作接口视图添加一个停车状态属性符，数据类型为bool，属性值为false；

[0655] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为B11飞机发动机操作接口视图添加一个轴承转速属性符，数据类型为double，属性值为0；

[0656] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为B11飞机发动机操作接口视图添加一个内部温度属性符，数据类型为double，属性值为0；

[0657] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为B11飞机发动机操作接口视图添加一个燃油流量属性符，数据类型为double，属性值为0；

[0658] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为B11飞机发动机操作接口视图添加一个滑油压力属性符，数据类型为double，属性值为0；

[0659] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为B11飞机发动机操作接口视图添加一个业务运作状态属性符，数据类型为bool，属性值为false；

[0660] 接口面板接收从实际系统建模环境送来的添加功能符的操作消息，向接口处理器发出为所涉构件类型添加功能的指令；接口处理器响应前述指令为B11飞机发动机操作构件类型符添加一个新流程功能，并将前述新功能设置为所涉功能；接口面板刷新接口视图，并将新功能符设置为所涉功能符；接口面板接收从实际系统建模环境送来的将所涉功能符的功能名称修改为“Bc01主过程”字样的操作信息，向接口处理器发出将所涉功能的功能名称修改为“Bc01主过程”字样的指令；接口处理器响应接口面板送来的前述指令，将前述新功能的功能名称修改为“Bc01主过程”字样；前述功能名称为“Bc01主过程”的功能简称为Bc01主过程功能；后续功能符依此类推，不再赘述；

[0661] 相似地，接口编辑器接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为B11飞机发动机操作构件类型符添加一个流程功能符，命名为Bc01主过程功能符；

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[0662] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为B11飞机发动机操作构件类型符添加一个流程功能符，命名为Bc02开车功能符；

[0663] 接口编辑器依次接收并响应从实际系统建模环境送来的操作消息，完成相应操作：为B11飞机发动机操作构件类型符添加一个流程功能符，命名为Bc03停车功能符；

[0664] 至此，B11飞机发动机操作接口视图及接口模型编辑完成。

[0665] B21混合气比控制手柄接口编辑

[0666] 图80给出完成之后的B21混合气比控制手柄接口视图，其构造过程如下：

[0667] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B21混合气比控制手柄构件类型符设置成为所涉构件类型符；

[0668] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B21混合气比控制手柄接口视图添加一个杆位置属性符，数据类型为double，属性值为0；

[0669] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B21混合气比控制手柄接口视图添加一个常数五十属性符，数据类型为double，属性值为50；

[0670] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B21混合气比控制手柄接口视图添加一个算法功能符，命名为Be01打开功能符；

[0671] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B21混合气比控制手柄接口视图添加一个算法功能符，命名为Be02关闭功能符；

[0672] 至此，B21混合气比控制手柄接口视图及接口模型编辑完成。

[0673] B22磁电机电门接口编辑

[0674] 图81给出完成之后的B22磁电机电门接口视图，其构造过程如下：

[0675] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B22磁电机电门构件类型符设置成为所涉构件类型符；

[0676] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B22磁电机电门接口视图添加一个绕x轴旋转度数属性符，数据类型为double，属性值为0；

[0677] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B22磁电机电门接口视图添加一个常数五属性符，数据类型为double，属性值为5；

[0678] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B22磁电机电门接口视图添加一个算法功能符，命名为Be03打开功能符；

[0679] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B22磁电机电门接口视图添加一个算法功能符，命名为Be04关闭功能符；

[0680] 至此，B22磁电机电门接口视图及接口模型编辑完成。

[0681] B23油门接口编辑

[0682] 图82给出完成之后的B23油门接口视图，其构造过程如下：

[0683] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B23油门构件类型符设置成为所涉构件类型符；

[0684] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B23油门接口视图添加一个杆位置属性符，数据类型为double，属性值为0；

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[0685] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B23油门接口视图添加一个常数一百属性符，数据类型为double，属性值为100；

[0686] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B23油门接口视图添加一个算法功能符，命名为Be05开启功能符；

[0687] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B23油门接口视图添加一个算法功能符，命名为Be06关闭功能符；

[0688] 至此，B23油门接口视图及接口模型编辑完成。

[0689] B24电门面板接口编辑

[0690] 图83给出完成之后的B24电门面板接口视图，其构造过程如下：

[0691] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B24电门面板构件类型符设置成为所涉构件类型符；

[0692] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B24电门面板接口视图添加一个面板颜色属性符，数据类型为string，属性值为灰色；

[0693] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B24电门面板接口视图添加一个在工作部件数属性符，数据类型为double，属性值为0；

[0694] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B24电门面板接口视图添加一个故障状态属性符，数据类型为bool，属性值为false；

[0695] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B24电门面板接口视图添加一个流程功能符，命名为Bc04打开部件电源功能符；

[0696] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B24电门面板接口视图添加一个流程功能符，命名为Bc05关闭部件电源功能符；

[0697] 至此，B24电门面板接口视图及接口模型编辑完成。

[0698] B25转速表接口编辑

[0699] 图84给出完成之后的B25转速表接口视图，其构造过程如下：

[0700] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B25转速表构件类型符设置成为所涉构件类型符；

[0701] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B25转速表接口视图添加一个读数属性符，数据类型为double，属性值为0；

[0702] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B25转速表接口视图添加一个报警状态属性符，数据类型为bool，属性值为false；

[0703] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B24电门面板接口视图添加一个流程功能符，命名为Bc06工作功能符；

[0704] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B24电门面板接口视图添加一个流程功能符，命名为Bc07停止功能符；

[0705] 至此，B25转速表接口视图及接口模型编辑完成。

[0706] B26燃油流量表接口编辑

[0707] 图85给出完成之后的B26燃油流量表接口视图，其构造过程如下：

[0708] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B26燃油流量表

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构件类型符设置成为所涉构件类型符；

[0709] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个指针所在刻度数属性符，数据类型为int，属性值为0；

[0710] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个指针颜色属性符，数据类型为string，属性值为白色；

[0711] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个表盘底色属性符，数据类型为string，属性值为绿色；

[0712] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个刻度数量属性符，数据类型为int，属性值为100；

[0713] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个刻度颜色属性符，数据类型为string，属性值为绿色；

[0714] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个每刻度数属性符，数据类型为int，属性值为10；

[0715] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个读数属性符，数据类型为int，属性值为500；

[0716] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个报警状态属性符，数据类型为bool，属性值为false；

[0717] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个常数零属性符，数据类型为double，属性值为0；

[0718] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个绕z轴旋转角度属性符，数据类型为double，属性值为0；

[0719] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个常数五十属性符，数据类型为double，属性值为50.0；

[0720] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B26燃油流量表接口视图添加一个常数零点三属性符，数据类型为double，属性值为0.3；

[0721] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B24电门面板接口视图添加一个算法功能符，命名为Be07工作功能符；

[0722] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B24电门面板接口视图添加一个算法功能符，命名为Be08停止功能符；

[0723] 至此，B26燃油流量表接口视图及接口模型编辑完成。

[0724] B27滑油压力表接口编辑

[0725] 图86给出完成之后的B27滑油压力表接口视图，其构造过程如下：

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[0726] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B27滑油压力表构件类型符设置成为所涉构件类型符；

[0727] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个指针所在刻度数属性符，数据类型为double，属性值为0；

[0728] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个指针颜色属性符，数据类型为string，属性值为黑色；

[0729] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个表盘底色属性符，数据类型为string，属性值为绿色；

[0730] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个刻度数量属性符，数据类型为double，属性值为40；

[0731] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个刻度颜色属性符，数据类型为string，属性值为绿色；

[0732] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个每刻度数属性符，数据类型为double，属性值为1；

[0733] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个读数属性符，数据类型为double，属性值为0；

[0734] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个报警状态属性符，数据类型为bool，属性值为false；

[0735] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个常数零属性符，数据类型为double，属性值为0；

[0736] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个绕x轴旋转度数属性符，数据类型为double，属性值为0；

[0737] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个常数二十属性符，数据类型为double，属性值为20；

[0738] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个常数一百属性符，数据类型为double，属性值为100；

[0739] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个算法功能符，命名为Be09工作功能符；

[0740] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B27滑油压力表接口视图添加一个算法功能符，命名为Be10停止功能符；

[0741] 至此，B27滑油压力表接口视图及接口模型编辑完成。

[0742] B31燃油泵电门接口编辑

[0743] 图87给出完成之后的B31燃油泵电门接口视图，其构造过程如下：

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[0744] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B31燃油泵电门构件类型符设置成为所涉构件类型符；

[0745] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B31燃油泵电门接口视图添加一个绕x轴旋转度数属性符，数据类型为double，属性值为0；

[0746] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B31燃油泵电门接口视图添加一个常数一十属性符，数据类型为double，属性值为10；

[0747] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B31燃油泵电门接口视图添加一个算法功能符，命名为Be11打开功能符；

[0748] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B31燃油泵电门接口视图添加一个算法功能符，命名为Be12关闭功能符；

[0749] 至此，B31燃油泵电门接口视图及接口模型编辑完成。

[0750] B32着陆灯接口编辑

[0751] 图88给出完成之后的B32着陆灯接口视图，其构造过程如下：

[0752] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B32着陆灯构件类型符设置成为所涉构件类型符；

[0753] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B32着陆灯接口视图添加一个绕x轴旋转度数属性符，数据类型为double，属性值为0；

[0754] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B32着陆灯接口视图添加一个常数一十属性符，数据类型为double，属性值为10；

[0755] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B32着陆灯接口视图添加一个算法功能符，命名为Be13打开功能符；

[0756] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B32着陆灯接口视图添加一个算法功能符，命名为Be14关闭功能符；

[0757] 至此，B32着陆灯接口视图及接口模型编辑完成。

[0758] B33航行灯接口编辑

[0759] 图89给出完成之后的B33航行灯接口视图，其构造过程如下：

[0760] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B33航行灯构件类型符设置成为所涉构件类型符；

[0761] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B33航行灯接口视图添加一个绕x轴旋转度数属性符，数据类型为double，属性值为0；

[0762] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B33航行灯接口视图添加一个常数一十属性符，数据类型为double，属性值为10；

[0763] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B33航行灯接口视图添加一个算法功能符，命名为Be15打开功能符；

[0764] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B33航行灯接口视图添加一个算法功能符，命名为Be16关闭功能符；

[0765] 至此，B33航行灯接口视图及接口模型编辑完成。

[0766] B34指针接口编辑

[0767] 图90给出完成之后的B34指针接口视图，其构造过程如下：

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[0768] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B34指针构件类型符设置成为所涉构件类型符；

[0769] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B34指针接口视图添加一个偏转角度属性符，数据类型为double，属性值为0；

[0770] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B34指针接口视图添加一个指针颜色属性符，数据类型为string，属性值为绿色；

[0771] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B34指针接口视图添加一个绕z轴旋转度数属性符，数据类型为double，属性值为0；

[0772] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B34指针接口视图添加一个常数四十属性符，数据类型为double，属性值为40.0；

[0773] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B34指针接口视图添加一个读数属性符，数据类型为double，属性值为1000；

[0774] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B34指针接口视图添加一个算法功能符，命名为Be17转动功能符；

[0775] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B34指针接口视图添加一个算法功能符，命名为Be18归零功能符；

[0776] 至此，B34指针接口视图及接口模型编辑完成。

[0777] B35表盘接口编辑

[0778] 图91给出完成之后的B35表盘接口视图，其构造过程如下：

[0779] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B35表盘构件类型符设置成为所涉构件类型符；

[0780] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B35表盘接口视图添加一个表盘底色属性符，数据类型为string，属性值为黑色；

[0781] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B35表盘接口视图添加一个刻度数量属性符，数据类型为int，属性值为50；

[0782] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B35表盘接口视图添加一个刻度颜色属性符，数据类型为string，属性值为绿色；

[0783] 接口编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：为B35表盘接口视图添加一个每刻度数属性符，数据类型为double，属性值为10.0；

[0784] 至此，B35表盘接口视图及接口模型编辑完成。

[0785] 算法编辑

[0786] 接下来，将详细说明各个算法视图的构造过程。

[0787] Be01打开算法编辑

[0788] 图92给出完成之后的Be01打开算法视图，其构造过程如下：

[0789] 层级面板接收实际系统建模环境送来的选中B21混合气比控制手柄构件类型符的操作信息，向层级处理器发出将B21混合气比控制手柄构件类型设置为所涉构件类型的指令；层级处理器响应前述指令将B21混合气比控制手柄类型设置为所涉构件类型；接口面板接收实际系统建模环境送来的选中Be01打开功能符的操作信息，向接口处理器发出将Be01打开功能设为所涉功能的指令；接口处理器响应前述指令将Be01打开功能设置为所涉功

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能；接口面板刷新接口视图将Be01打开功能符设置为所涉功能符；为描述方便起见，根据功能名称将实现Be01打开功能符的算法视图简称为Be01打开算法视图；后续其他算法视图依此类推，不再赘述；

[0790] 算法面板接收实际系统建模环境送来的添加一个减法算符的操作信息，向算法处理器发出添加一个减法算元的指令；算法处理器响应前述指令添加一个减法算元；所述减法算元符简称为混合比手柄打开减法算符；所述减法算符已经预先具有一个被减数输入属性符、一个减数输入属性和差数输出属性符共三个属性符；算法面板接收实际系统建模环境送来的建立从B21混合气比控制手柄构件类型符的杆位置属性符向混合比手柄打开算符的被减数属性符的传值符的操作信息；算法面板响应该操作信息向算法处理器发出建立从B21混合气比控制手柄构件类型的杆位置属性向混合比手柄打开算元的被减数属性的传值的指令；算法处理器响应前述指令，建立从B21混合气比控制手柄构件类型的杆位置属性向混合比手柄打开算元的被减数属性的传值；算元面板刷新显示算法视图，建立从B21混合气比控制手柄构件类型符的杆位置属性符向混合比手柄打开算符的被减数属性符的传值符；算法面板接收实际系统建模环境送来的建立从B21混合气比控制手柄构件类型符的常数五十属性符向混合比手柄打开算符的减数属性符的传值符的操作信息；算法面板响应该操作信息向算法处理器发出建立从B21混合气比控制手柄构件类型的常数五十属性向混合比手柄打开算元的减数属性的传值的指令；算法处理器响应前述指令，建立从B21混合气比控制手柄构件类型的常数五十属性向混合比手柄打开算元的减数属性的传值；算元面板刷新显示算法视图，建立从B21混合气比控制手柄构件类型符的常数五十属性符向混合比手柄打开算符的减数属性符的传值符；算法面板接收实际系统建模环境送来的建立从混合比手柄打开算符的差数属性符向B21混合气比控制手柄构件类型符的杆位置属性符的传值符的操作信息；算法面板响应该操作信息向算法处理器发出建立从混合比手柄打开算元的差数属性向B21混合气比控制手柄构件类型的杆位置属性的传值的指令；算法处理器响应前述指令，建立从混合比手柄打开算元的差数属性向B21混合气比控制手柄构件类型的杆位置属性的传值；算元面板刷新显示算法视图，建立从混合比手柄打开算符的差数属性符向B21混合气比控制手柄构件类型符的杆位置属性符的传值符；

[0791] 至此，Be01打开算法视图及算法模型编辑完成。

[0792] Be02关闭算法编辑

[0793] 图93给出完成之后的Be02关闭算法视图，其构造过程如下：

[0794] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be02关闭功能符设置为所涉功能符；

[0795] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个加法算符，命名为混合比手柄关闭算符；建立从B21混合气比控制手柄构件类型符的杆位置属性符向混合比手柄关闭算符的被加数属性符的传值符；建立从B21混合气比控制手柄构件类型符的常数五十属性符向混合比手柄关闭算符的加数属性符的传值符；建立从混合比手柄关闭算符的和数属性符向B21混合气比控制手柄构件类型符的杆位置属性符的传值符；

[0796] 至此，Be02关闭算法视图及算法模型编辑完成。

[0797] Be03打开算法编辑

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[0798] 图94给出完成之后的Be03打开算法视图，其构造过程如下：

[0799] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B22磁电机电门构件类型符设置为所涉构件类型符；

[0800] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be03打开功能符设置为所涉功能符；

[0801] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个加法算符，命名为磁电机打开算符；建立从B22磁电机电门构件类型符的绕x轴旋转度属性符向磁电机打开算符的被加数属性符的传值符；建立从B22磁电机电门构件类型符的常数五属性符向磁电机打开算符的加数属性符的传值符；建立从磁电机打开算符的和数属性符向B22磁电机电门构件类型符的绕x轴旋转度属性符的传值符；

[0802] 至此，Be03打开算法视图及算法模型编辑完成。

[0803] Be04关闭算法编辑

[0804] 图95给出完成之后的Be04关闭算法视图，其构造过程如下：

[0805] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be04关闭功能符设置为所涉功能符；

[0806] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个减法算符，命名为磁电机关闭算符；建立从B22磁电机电门构件类型符的绕x轴旋转度属性符向磁电机关闭算符的被减数属性符的传值符；建立从B22磁电机电门构件类型符的常数五属性符向磁电机关闭算符的减数属性符的传值符；建立从磁电机关闭算符的差数属性符向B22磁电机电门构件类型符的绕x轴旋转度属性符的传值符；

[0807] 至此，Be04关闭算法视图及算法模型编辑完成。

[0808] Be05开启算法编辑

[0809] 图96给出完成之后的Be05开启算法视图，其构造过程如下：

[0810] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B23油门构件类型符设置为所涉构件类型符；

[0811] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be05开启功能符设置为所涉功能符；

[0812] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个减法算符，命名为油门开启算符；建立从B23油门构件类型符的杆位置属性符向油门开启算符的被减数属性符的传值符；建立从B23油门构件类型符的常数一百属性符向油门开启算符的减数属性符的传值符；建立从油门开启算符的差数属性符向B23油门构件类型符的杆位置属性符的传值符；

[0813] 至此，Be05开启算法视图及算法模型编辑完成。

[0814] Be06关闭算法编辑

[0815] 图97给出完成之后的Be06关闭算法视图，其构造过程如下：

[0816] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be06关闭功能符设置为所涉功能符；

[0817] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个加法算符，命名为油门关闭算符；建立从B23油门构件类型符的杆位置属性符向油门

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关闭算符的被加数属性符的传值符；建立从B23油门构件类型符的常数一百属性符向油门关闭算符的加数属性符的传值符；建立从油门关闭算符的和数属性符向B23油门构件类型符的杆位置属性符的传值符；

[0818] 至此，Be06关闭算法视图及算法模型编辑完成。

[0819] Be07工作算法编辑

[0820] 图98给出完成之后的Be07工作算法视图，其构造过程如下：

[0821] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B26燃油流量表构件类型符设置为所涉构件类型符；

[0822] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be07工作功能符设置为所涉功能符；

[0823] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个加法算符，命名为指针旋转算符；建立从B26燃油流量表构件类型符的绕z轴旋转角属性符向指针旋转算符的被加数属性符的传值符；建立从B26燃油流量表构件类型符的常数五十属性符向指针旋转算符的加数属性符的传值符；建立从指针旋转算符的和数属性符向B26燃油流量表构件类型符的绕z轴旋转角属性符的传值符；

[0824] 算法编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个乘法算符，命名为刻度计算算符；建立从指针旋转算符的和数属性符向刻度计算算符的被乘数属性符的传值符；建立从B26燃油流量表构件类型符的常数零点三属性符向指针旋转算符的乘数属性符的传值符；建立从刻度计算算符的积数属性符向B26燃油流量表构件类型符的读数属性符的传值符；

[0825] 至此，Be07工作算法视图及算法模型编辑完成。

[0826] Be08停止算法编辑

[0827] 图99给出完成之后的Be08停止算法视图，其构造过程如下：

[0828] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be08停止功能符设置为所涉功能符；

[0829] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个赋值算符，命名为刻度归零算符；建立从B26燃油流量表构件类型符的常数零属性符向刻度归零算符的输入属性符的传值符；建立从刻度归零算符的输出属性符向B26燃油流量表构件类型符的读数属性符的传值符；

[0830] 算法编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个赋值算符，命名为转动停止算符；建立从B26燃油流量表构件类型符的常数零属性符向转动停止算符的输入属性符的传值符；建立从转动停止算符的输出属性符向B26燃油流量表构件类型符的绕z轴旋转角属性符的传值符；

[0831] 至此，Be08停止算法视图及算法模型编辑完成。

[0832] Be09工作算法编辑

[0833] 图100给出完成之后的Be09工作算法视图，其构造过程如下：

[0834] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B27滑油压力表构件类型符设置为所涉构件类型符；

[0835] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be09工作功能符

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设置为所涉功能符；

[0836] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个加法算符，命名为指针旋转算符；建立从B27滑油压力表构件类型符的绕z轴旋转度属性符向指针旋转算符的被加数属性符的传值符；建立从B27滑油压力表构件类型符的常数二十属性符向指针旋转算符的加数属性符的传值符；建立从指针旋转算符的和数属性符向B27滑油压力表构件类型符的绕z轴旋转度属性符的传值符；

[0837] 算法编辑器依次接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个乘法算符，命名为刻度计算算符；建立从指针旋转算符的和数属性符向刻度计算算符的被乘数属性符的传值符；建立从B27滑油压力表构件类型符的常数一百属性符向指针旋转算符的乘数属性符的传值符；建立从刻度计算算符的积数属性符向B27滑油压力表构件类型符的读数属性符的传值符；

[0838] 至此，Be09工作算法视图及算法模型编辑完成。

[0839] Be10停止算法编辑

[0840] 图101给出完成之后的Be10停止算法视图，其构造过程如下：

[0841] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be10停止功能符设置为所涉功能符；

[0842] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个赋值算符，命名为转动停止算符；建立从B27滑油压力表构件类型符的常数零属性符向转动停止算符的输入属性符的传值符；建立从转动停止算符的输出属性符向B27滑油压力表构件类型符的绕x轴旋转度属性符的传值符；

[0843] 至此，Be10停止算法视图及算法模型编辑完成。

[0844] Be11打开算法编辑

[0845] 图102给出完成之后的Be11打开算法视图，其构造过程如下：

[0846] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B31燃油泵电门构件类型符设置为所涉构件类型符；

[0847] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be11打开功能符设置为所涉功能符；

[0848] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个加法算符，命名为燃油泵打开算符；建立从B31燃油泵电门构件类型符的绕x轴旋转度属性符向燃油泵打开算符的被加数属性符的传值符；建立从B31燃油泵电门构件类型符的常数一十属性符向燃油泵打开算符的加数属性符的传值符；建立从燃油泵打开算符的和数属性符向B31燃油泵电门构件类型符的绕x轴旋转度属性符的传值符；

[0849] 至此，Be11打开算法视图及算法模型编辑完成。

[0850] Be12关闭算法编辑

[0851] 图103给出完成之后的Be12关闭算法视图，其构造过程如下：

[0852] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be12关闭功能符设置为所涉功能符；

[0853] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个减法算符，命名为燃油泵关闭算符；建立从B31燃油泵电门构件类型符的绕x轴旋转

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度属性符向燃油泵关闭算符的被减数属性符的传值符；建立从B31燃油泵电门构件类型符的常数一十属性符向燃油泵关闭算符的减数属性符的传值符；建立从燃油泵关闭算符的差数属性符向B31燃油泵电门构件类型符的绕x轴旋转度属性符的传值符；

[0854] 至此，Be12关闭算法视图及算法模型编辑完成。

[0855] Be13打开算法编辑

[0856] 图104给出完成之后的Be13打开算法视图，其构造过程如下：

[0857] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B32着陆灯构件类型符设置为所涉构件类型符；

[0858] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be13打开功能符设置为所涉功能符；

[0859] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个加法算符，命名为着陆灯打开算符；建立从B32着陆灯构件类型符的绕x轴旋转度属性符向着陆灯打开算符的被加数属性符的传值符；建立从B32着陆灯构件类型符的常数一十属性符向着陆灯打开算符的加数属性符的传值符；建立从着陆灯打开算符的和数属性符向B32着陆灯构件类型符的绕x轴旋转度属性符的传值符；

[0860] 至此，Be13打开算法视图及算法模型编辑完成。

[0861] Be14关闭算法编辑

[0862] 图105给出完成之后的Be14关闭算法视图，其构造过程如下：

[0863] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be14关闭功能符设置为所涉功能符；

[0864] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个减法算符，命名为着陆灯关闭算符；建立从B32着陆灯构件类型符的绕x轴旋转度属性符向着陆灯关闭算符的被减数属性符的传值符；建立从B32着陆灯构件类型符的常数一十属性符向着陆灯关闭算符的减数属性符的传值符；建立从着陆灯关闭算符的差数属性符向B32着陆灯构件类型符的绕x轴旋转度属性符的传值符；

[0865] 至此，Be14关闭算法视图及算法模型编辑完成。

[0866] Be15打开算法编辑

[0867] 图106给出完成之后的Be15打开算法视图，其构造过程如下：

[0868] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B33航行灯构件类型符设置为所涉构件类型符；

[0869] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be15打开功能符设置为所涉功能符；

[0870] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个加法算符，命名为航行灯打开算符；建立从B33航行灯构件类型符的绕x轴旋转度属性符向航行灯打开算符的被加数属性符的传值符；建立从B33航行灯构件类型符的常数一十属性符向航行灯打开算符的加数属性符的传值符；建立从航行灯打开算符的和数属性符向B33航行灯构件类型符的绕x轴旋转度属性符的传值符；

[0871] 至此，Be15打开算法视图及算法模型编辑完成。

[0872] Be16关闭算法编辑

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[0873] 图107给出完成之后的Be16关闭算法视图，其构造过程如下：

[0874] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be16关闭功能符设置为所涉功能符；

[0875] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个减法算符，命名为航行灯关闭算符；建立从B33航行灯构件类型符的绕x轴旋转度属性符向航行灯关闭算符的被减数属性符的传值符；建立从B33航行灯构件类型符的常数一十属性符向航行灯关闭算符的减数属性符的传值符；建立从航行灯关闭算符的差数属性符向B33航行灯构件类型符的绕x轴旋转度属性符的传值符；

[0876] 至此，Be16关闭算法视图及算法模型编辑完成。

[0877] Be17转动算法编辑

[0878] 图108给出完成之后的Be17转动算法视图，其构造过程如下：

[0879] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B34指针构件类型符设置为所涉构件类型符；

[0880] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be17转动功能符设置为所涉功能符；

[0881] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个加法算符，命名为指针转动算符；建立从B34指针构件类型符的绕z轴旋转度属性符向指针转动算符的被加数属性符的传值符；建立从B34指针构件类型符的常数四十属性符向指针转动算符的加数属性符的传值符；建立从指针转动算符的和数属性符向B34指针构件类型符的绕z轴旋转度属性符的传值符；

[0882] 至此，Be17转动算法视图及算法模型编辑完成。

[0883] Be18归零算法编辑

[0884] 图109给出完成之后的Be18归零算法视图，其构造过程如下：

[0885] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Be18归零功能符设置为所涉功能符；

[0886] 算法编辑器接收并响应从实际系统建模环境送来的操作信息，完成相应操作：添加一个减法算符，命名为转动停止算符；建立从B34指针构件类型符的绕z轴旋转度属性符向转动停止算符的被减数属性符的传值符；建立从B34指针构件类型符的常数四十属性符向转动停止算符的减数属性符的传值符；建立从转动停止算符的差数属性符向B34指针构件类型符的绕z轴旋转度属性符的传值符；

[0887] 至此，Be18归零算法视图及算法模型编辑完成。同时，本实施例中所有的算法视图及算法模型编辑完成。

[0888] 流程编辑

[0889] 接下来，将详细说明各个流程视图的构造过程。

[0890] Bc01主过程流程编辑

[0891] 图110为完成后的B11飞机发动机操作构件类型符的Bc01主过程流程视图，其构造过程如下：

[0892] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B11飞机发动机操作构件类型符设置为所涉构件类型符；接口编辑器接收并响应实际系统建模环境送来的

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操作信息，将Bc01主过程功能符设置为所涉功能符；为表述方便，我们根据功能名称将Bc01主过程功能符的流程视图简称为Bc01主过程流程视图；其他功能符的流程视图依此类推，不再赘述；

[0893] 见图110，层级面板接收实际系统建模环境送来的选中B11飞机发动机操作构件类型符的操作信息，向层级处理器发出将B11飞机发动机操作构件类型设置为所涉构件类型的指令；层级处理器响应前述指令将B11飞机发动机操作构件类型设置为所涉构件类型；接口面板接收实际系统建模环境送来的选中Bc01主过程功能符的操作信息，将Bc01主过程功能符设置为所涉功能符，向接口处理器发出将Bc01主过程功能设置为所涉功能的指令；接口处理器响应前述指令将Bc01主过程功能设置为所涉功能；为表述方便，我们根据功能名称将Bc01主过程功能符的流程视图简称为Bc01主过程流程视图；其他功能符的流程视图依此类推，不再赘述；

[0894] 流程编辑器为Bc01主过程流程视图创建一个省缺的顺序活动符作为根活动符，并自动设置该根活动符为所涉活动符；所述顺序活动符是一个具有顺序执行内部活动功能的算元活动符；所述顺序活动符具有开始节点、结束节点，并在开始节点和结束节点之间，顺序提供多个节点以便添加其他活动符；为叙述方便，根据流程视图名称称其根活动符为Bc01主过程根活动符；需要说明的是，流程编辑器为每个流程视图都会创建一个根活动符，根活动符命名依此类推，不再赘述；

[0895] 流程面板接收实际系统建模环境送来的添加添加一个循环活动符的操作信息；为了叙述简便，简称为Bc01主过程帧循环活动符，后续其他活动符依此类推；流程面板响应前述操作信息向流程处理器相应发出向所涉活动中添加一个Bc01主过程帧循环活动的指令，流程处理器响应前述指令在业务主过程根活动中添加一个Bc01主过程帧循环活动符；流程面板可视显示流程视图；

[0896] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc01主过程帧循环活动符的循环序列中添加一个条件活动符，简称为训练开始条件活动符；流程面板可视显示流程视图；

[0897] 流程编辑器接收并响应从实际系统建模环境送来的操作信息，在训练开始条件活动符的为真分支中添加一个基于B11飞机发动机操作构件类型符的Bc02开车功能符的活动符，简称为Bc02开车活动符；流程面板可视显示流程视图；

[0898] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc01主过程帧循环活动符的循环序列中添加一个条件活动符，简称为训练结束条件活动符；流程面板可视显示流程视图；

[0899] 流程编辑器接收并响应从实际系统建模环境送来的操作信息，在训练结束条件活动符的为真分支中添加一个基于B11飞机发动机操作构件类型符的Bc03停车功能符的活动符，简称为Bc03停车活动符；流程面板可视显示流程视图；

[0900] 至此，Bc01主过程流程视图及流程模型编辑完成。

[0901] Bc02开车流程编辑

[0902] 图111给出完成之后的B11飞机发动机操作构件类型符的Bc02开车流程视图，其构造过程如下：

[0903] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Bc02开车功能符

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设置为所涉功能符；

[0904] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个基于B24电门面板构件类型符的Bc04打开部件电源功能符的活动符，简称为Bc04打开部件电源活动符；

[0905] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个基于B21混合气比控制手柄构件类型符的Be01打开功能符的活动符，简称为Be01打开活动符；

[0906] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个基于B26燃油流量表构件类型符的Be07工作功能符的活动符，简称为Be07工作活动符；

[0907] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个基于B21混合气比控制手柄构件类型符的Be02关闭功能符的活动符，简称为Be02关闭活动符；

[0908] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个基于B24电门面板构件类型符的Bc05关闭部件电源功能符的活动符，简称为Bc05关闭部件电源活动符；

[0909] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个基于B22磁电机电门构件类型符的Be03打开功能符的活动符，简称为Be03打开活动符；

[0910] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个基于B21混合气比控制手柄构件类型符的Be01打开功能符的活动符，简称为Be01打开活动符；

[0911] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个基于B23油门构件类型符的Be05开启功能符的活动符，简称为Be05开启活动符；

[0912] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个基于B25转速表构件类型符的Bc06工作功能符的活动符，简称为Bc06工作活动符；

[0913] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个基于B27滑油压力表构件类型符的Be09工作功能符的活动符，简称为Be09工作活动符；

[0914] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个相同比较活动符，简称为第一相同比较活动符；

[0915] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc02开车根活动符中添加一个条件活动符，简称为第一条件活动符；

[0916] 流程编辑器接收并响应从实际系统建模环境送来的操作信息，在第一条件活动符的为真分支中添加一个基于B21混合气比控制手柄构件类型符的Be02关闭功能符的活动符，简称为Be02关闭活动符；

[0917] 流程编辑器接收并响应从实际系统建模环境送来的操作信息，在第一条件活动符的为真分支中添加一个基于B11飞机发动机操作构件类型符的Bc03停车功能符的活动符，

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简称为Bc03停车活动符；

[0918] 至此，Bc02开车流程视图及流程模型编辑完成。

[0919] Bc03停车流程编辑

[0920] 图112给出完成之后的B11飞机发动机操作构件类型符的Bc03停车流程视图，其构造过程如下：

[0921] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Bc03停车功能符设置为所涉功能符；

[0922] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc03停车根活动符中添加一个基于B23油门构件类型符的Be06关闭功能符的活动符，简称为Be06关闭活动符；

[0923] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc03停车根活动符中添加一个基于B25转速表构件类型符的Bc07停止功能符的活动符，简称为Bc07停止活动符；

[0924] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc03停车根活动符中添加一个B27滑油压力表构件类型符的Be10停止功能符的活动符，简称为Be10停止活动符；

[0925] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc03停车根活动符中添加一个基于B21混合气比控制手柄构件类型符的Be02关闭功能符的活动符，简称为Be02关闭活动符；

[0926] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc03停车根活动符中添加一个基于B26燃油流量表构件类型符的Be08停止功能符的活动符，简称为Be08停止活动符；

[0927] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc03停车根活动符中添加一个基于B22磁电机电门构件类型符的Be04关闭功能符的活动符，简称为Be04关闭活动符；

[0928] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc03停车根活动符中添加一个基于B21混合气比控制手柄构件类型符的Be01打开功能符的活动符，简称为Be01打开活动符；

[0929] 至此，Bc03停车流程视图及流程模型编辑完成。

[0930] Bc04打开部件电源流程编辑

[0931] 图113给出完成之后的B24电门面板构件类型符的Bc04打开部件电源流程视图，其构造过程如下：

[0932] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B24电门面板构件类型符设置为所涉构件类型符；

[0933] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Bc04打开部件电源功能符设置为所涉功能符；

[0934] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc04打开部件电源根活动符中添加一个基于B31燃油泵电门构件类型符的Be11打开功能符的活动符，简称为Be11打开活动符；

[0935] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc04打开部件电源

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根活动符中添加添加一个基于B32着陆灯构件类型符的Be13打开功能符的活动符，简称为Be13打开活动符；

[0936] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc04打开部件电源根活动符中添加添加一个基于B33航行灯构件类型符的Be15打开功能符的活动符，简称为Be15打开活动符；

[0937] 至此，Bc04打开部件电源流程视图及流程模型编辑完成。

[0938] Bc05关闭部件电源流程编辑

[0939] 图114给出完成之后的B24电门面板构件类型符的Bc05关闭部件电源流程视图，其构造过程如下：

[0940] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Bc05关闭部件电源功能符设置为所涉功能符；

[0941] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc05关闭部件电源根活动符中添加一个基于B31燃油泵电门构件类型符的Be12关闭功能符的活动符，简称为Be12关闭活动符；

[0942] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc05关闭部件电源根活动符中添加一个基于B32着陆灯构件类型符的Be14关闭功能符的活动符，简称为Be14关闭活动符；

[0943] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc05关闭部件电源根活动符中添加一个基于B33航行灯构件类型符的Be16关闭功能符的活动符，简称为Be16关闭活动符；

[0944] 至此，Bc05关闭部件电源流程视图及流程模型编辑完成。

[0945] Bc06工作流程编辑

[0946] 图115给出完成之后的B25转速表构件类型符的Bc06工作流程视图，其构造过程如下：

[0947] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B25转速表构件类型符设置为所涉构件类型符；

[0948] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Bc06工作功能符设置为所涉功能符；

[0949] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc06工作根活动符中添加一个基于B34指针构件类型符的Be17转动功能符的活动符，简称为Be17转动活动符；

[0950] 至此，Bc06工作流程视图及流程模型编辑完成。

[0951] Bc07停止流程编辑

[0952] 图116给出完成之后的B25转速表构件类型符的Bc07停止流程视图，其构造过程如下：

[0953] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Bc07停止功能符设置为所涉功能符；

[0954] 流程编辑器接收并响应从实际系统建模环境送来操作信息，在Bc07停止根活动符中添加一个基于B34指针构件类型符的Be18归零功能符的活动符，简称为Be18归零活动符；

[0955] 至此，Bc07停止流程视图及流程模型编辑完成。与此同时，本实施例的所有流程视

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图及流程模型编辑完成。

[0956] 传输编辑

[0957] 接下来，将详细说明各个活动符的传输视图的构造过程。

[0958] Bc01主过程帧循环传输编辑

[0959] 图117为完成后的Bc01主过程帧循环传输视图，其构造过程如下：

[0960] 层级面板接收实际系统建模环境送来的选中B11飞机发动机操作构件类型符的操作信息，向层级处理器发出将B11飞机发动机操作构件类型设置为所涉构件类型的指令；层级处理器响应前述指令将B11飞机发动机操作构件类型设置为所涉构件类型；层级面板刷显示新层级视图，将B11飞机发动机操作构件类型符设置为所涉构件类型符；接口面板接收实际系统建模环境送来的选中Bc01主过程功能符的操作信息，向接口处理器发出将Bc01主过程功能设置为所涉功能的指令；接口处理器响应前述指令将Bc01主过程功能设置为所涉功能；接口面板可视显示接口视图将Bc01主过程功能符设置为所涉功能符；流程面板接收实际系统建模环境送来的选中Bc01主过程帧循环活动符的操作信息，向流程处理器发出将Bc01主过程帧循环活动设置为所涉活动的指令；流程处理器响应前述命令将Bc01主过程帧循环活动设置为所涉活动；流程面板刷新流程视图显示，将Bc01主过程帧循环活动符设置为所涉活动符；传输编辑器以所涉活动符为对象构造传输视图，形成Bc01主过程帧循环活动符的传输视图；为了简便起见，根据活动符的名称将Bc01主过程帧循环活动符的传输视图简称为Bc01主过程帧循环活动传输视图，其他传输视图依此类比，不再赘述；

[0961] 传输面板接收实际系统建模环境送来的建立一个从B11飞机发动机操作构件类型符的业务运转态属性符到Bc01主过程帧循环活动符的状态属性符的输入传输符的操作信息；传输面板响应前述操作信息向传输处理器发出建立一个从B11飞机发动机操作构件类型的业务运转态属性到Bc01主过程帧循环活动的状态属性的输入传输的指令；传输处理器响应前述指令建立一个从B11飞机发动机操作构件类型的业务运转态属性到Bc01主过程帧循环活动的状态属性的输入传输；传输面板可视显示传输视图，建立一个从B11飞机发动机操作构件类型符的业务运转态属性符到Bc01主过程帧循环活动符的状态属性符的输入传输符；所述Bc01主过程帧循环活动符的循环条件属性符是指Bc01主过程帧循环活动符所依托的循环算元的条件属性符的简称；后续其他活动符的属性符的含义依此类推，不再赘述；

[0962] 至此，Bc01主过程帧循环传输视图及传输模型编辑完成。

[0963] 训练开始条件传输编辑

[0964] 图118为完成后的训练开始条件传输视图，其构造过程如下：

[0965] 流程编辑器接收并响应从实际系统建模环境送来的操作信息，将训练开始条件活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成训练开始条件传输视图；

[0966] 传输符编辑器接收并响应从实际系统建模环境送来的操作信息，建立一个从B11飞机发动机操作构件类型符的开车状态属性符到训练开始条件活动符的状态属性符的输入传输符；

[0967] 至此，训练开始条件传输视图及传输模型编辑完成。

[0968] Bc02开车传输编辑

[0969] 空。

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[0970] 训练结束条件传输编辑

[0971] 图119为完成后的训练结束条件传输视图，其构造过程如下：

[0972] 流程编辑器接收并响应从实际系统建模环境送来的操作信息，将训练结束条件活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成训练结束条件传输视图；

[0973] 传输符编辑器接收并响应从实际系统建模环境送来的操作信息，建立一个从B11飞机发动机操作构件类型符的停车状态属性符到训练结束条件活动符的状态属性符的输入传输符；

[0974] 至此，训练结束条件传输视图及传输模型编辑完成。

[0975] Bc03停车传输编辑

[0976] 空。

[0977] Bc04打开部件电源传输编辑

[0978] 空。

[0979] Be01打开传输编辑

[0980] 空。

[0981] Be07工作传输编辑

[0982] 空。

[0983] Be02关闭传输编辑

[0984] 空。

[0985] Bc05关闭部件电源传输编辑

[0986] 空。

[0987] Be03打开传输编辑

[0988] 空。

[0989] Be01打开传输编辑

[0990] 空。

[0991] Be05开启传输编辑

[0992] 空。

[0993] Bc06工作传输编辑

[0994] 空。

[0995] Be09工作传输编辑

[0996] 空。

[0997] 第一相同比较传输编辑

[0998] 图120为完成后的第一相同比较传输视图，其构造过程如下：

[0999] 层级编辑器接收并响应从实际系统建模环境送来的操作信息，将B11飞机发动机操作构件类型符设置为所涉构件类型符；

[1000] 接口编辑器接收并响应从实际系统建模环境送来的操作信息，将Bc02开车功能符设置为所涉功能符；

[1001] 流程编辑器接收并响应从实际系统建模环境送来的操作信息，将第一相同比较活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成第一相同

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比较传输视图；

[1002] 传输符编辑器接收并响应从实际系统建模环境送来的操作信息，建立一个从B27滑油压力表构件类型符的读数属性符向第一相同比较活动符的被比较属性符传值符；

[1003] 传输符编辑器接收并响应从实际系统建模环境送来的操作信息，建立一个从B27滑油压力表构件类型符的常数零属性符向第一相同比较活动符的比较属性符传值符；

[1004] 传输符编辑器接收并响应从实际系统建模环境送来的操作信息，建立一个从第一相同比较活动符的结果属性符向B27滑油压力表构件类型符的读数为零吗属性符传值符；

[1005] 至此，第一相同比较传输视图及传输模型编辑完成。

[1006] 第一条件传输编辑

[1007] 图121为完成后的第一条件传输视图，其构造过程如下：

[1008] 流程编辑器接收并响应从实际系统建模环境送来的操作信息，将第一条件活动符设置为所涉活动符；传输符编辑器以所涉活动符为对象构造传输视图，形成第一条件传输视图；

[1009] 传输符编辑器接收并响应从实际系统建模环境送来的操作信息，建立一个从B27滑油压力表构件类型符的读数为零吗属性符向第一条件活动符的状态属性符传值符；

[1010] 至此，第一条件传输视图及传输模型编辑完成。

[1011] Be02关闭传输编辑

[1012] 空。

[1013] Bc03停车传输编辑

[1014] 空。

[1015] Be06关闭传输编辑

[1016] 空。

[1017] Bc07停止传输编辑

[1018] 空。

[1019] Be10停止传输编辑

[1020] 空。

[1021] Be02关闭传输编辑

[1022] 空。

[1023] Be08停止传输编辑

[1024] 空。

[1025] Be04关闭传输编辑

[1026] 空。

[1027] Be01打开传输编辑

[1028] 空。

[1029] Be11打开传输编辑

[1030] 空。

[1031] Be13打开传输编辑

[1032] 空。

[1033] Be15打开传输编辑

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[1034] 空。

[1035] Be12关闭传输编辑

[1036] 空。

[1037] Be14关闭传输编辑

[1038] 空。

[1039] Be16关闭传输编辑

[1040] 空。

[1041] Be17转动传输编辑

[1042] 空。

[1043] Be18归零传输编辑

[1044] 空。

[1045] 至此，本实施例中由软件层级视图、软件接口视图、软件交互视图、软件算法视图、软件流程视图和软件传输视图及相应模型构成的业务管理YWGL软件视图及软件模型编辑完毕。

[1046] 本实施例演示了一个不掌握现有复杂系统建模语言、不掌握计算机程序语言的普通航空训练人员，无须依赖专业建模人员和程序开发人员，如何独立地将自己关于座舱训练的构想，在相对短的时间内利用本发明编辑出一个具有运算性的座舱训练系统视图及相应的系统模型。不但编辑过程清晰，编辑方法简单，而且，视图质量明显较高，花费的时间明显较少。

[1047] 与该同一个航空训练人员与专业建模人员或程序开发人员的协同开发座舱训练系统视图及系统模型的模式相比，该航空训练人员利用本发明独立开发座舱训练系统视图及系统模型，取得了如下的明显效果：

[1048] (1)质量高：编辑完成的系统视图及系统模型是该航空训练人员心目中所需要的，避免了专业建模人员或程序开发人员与该航空训练人员对座舱训练系统视图及系统模型的理解偏差；

[1049] (2)时间短：由于节省了航空训练人员与专业建模人员或程序开发人员之间的繁杂沟通，整个建模花费的时间周期缩短到原来的1/5，大大地节约了时间、精力和经费。

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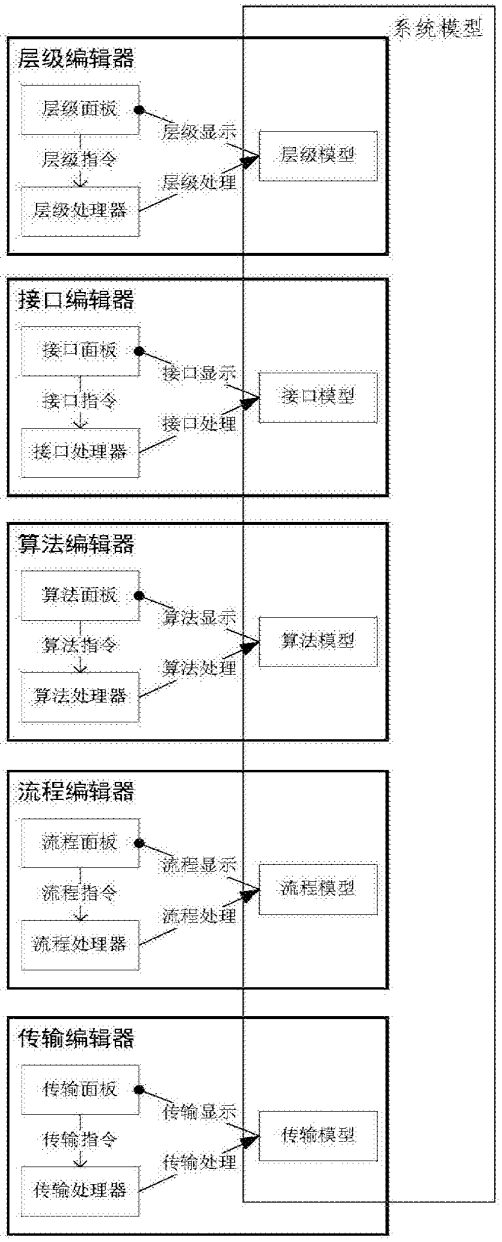


图1

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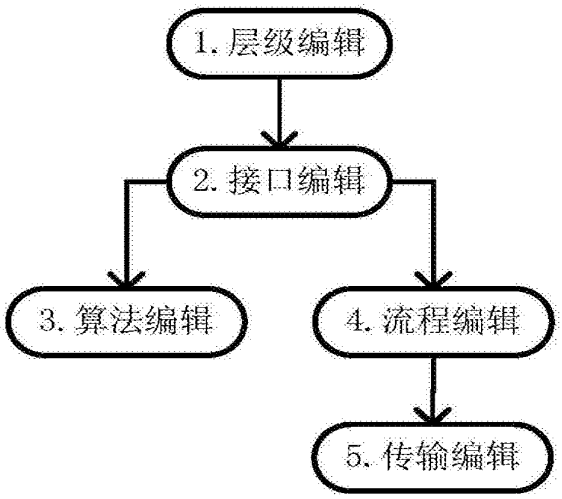


图2

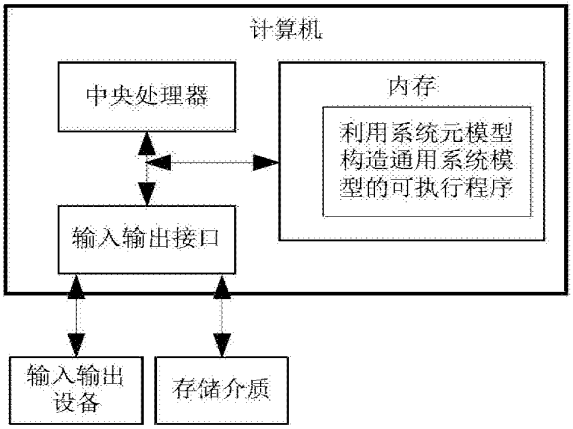


图3

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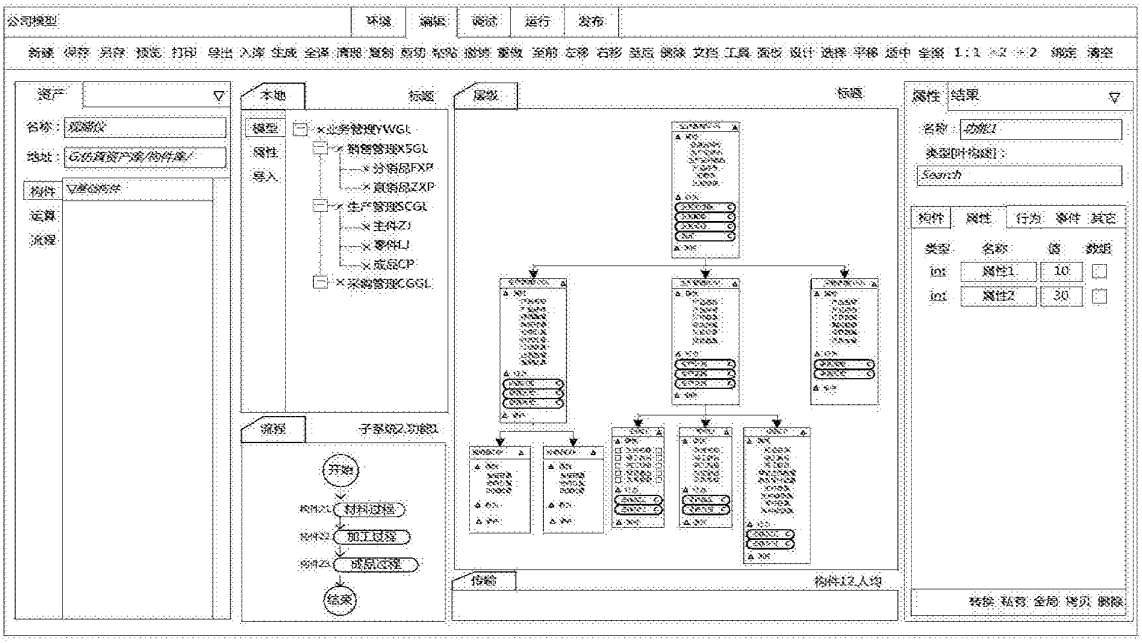


图4

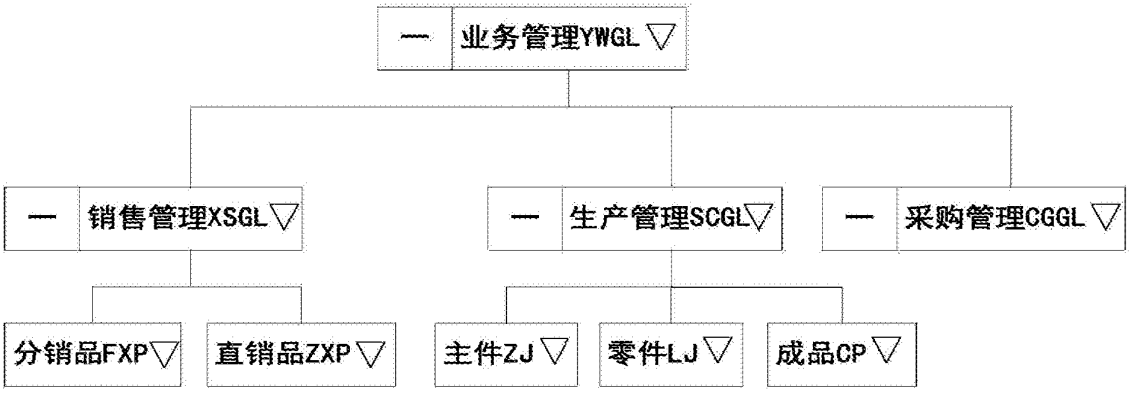


图5

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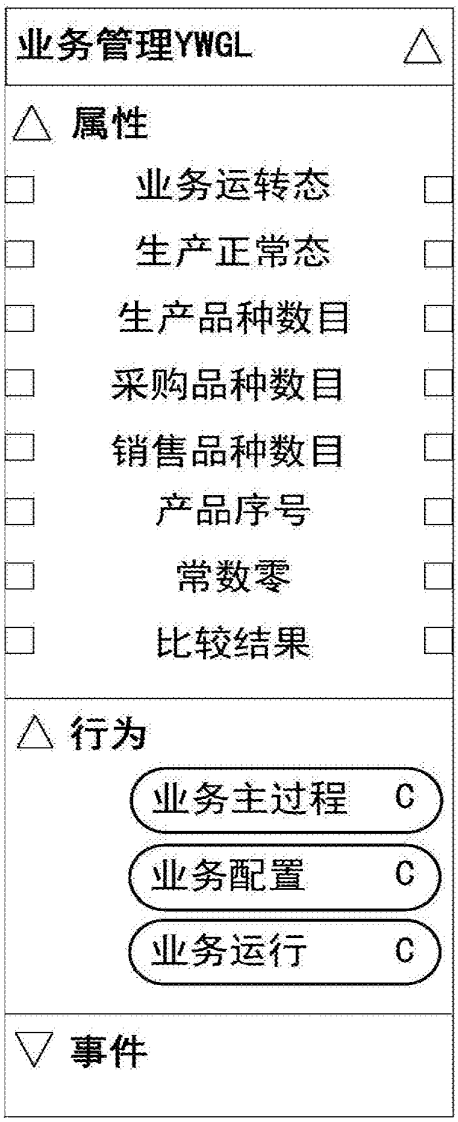


图6

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图7

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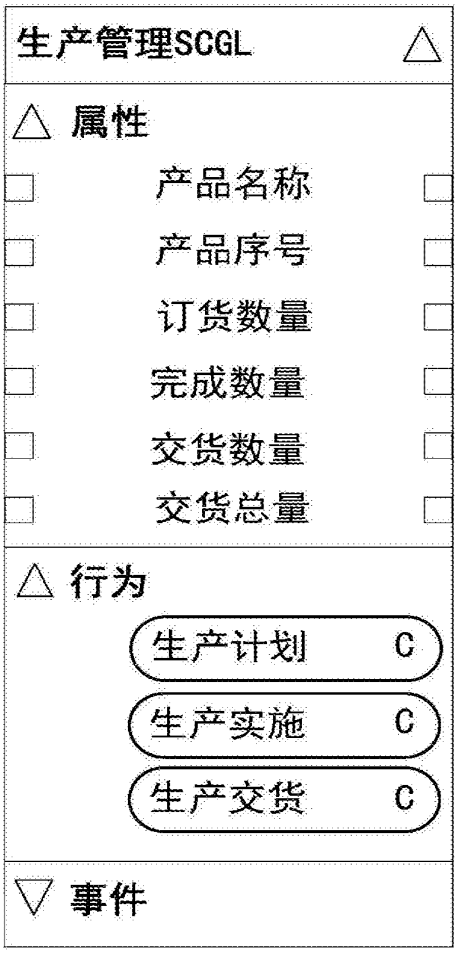


图8

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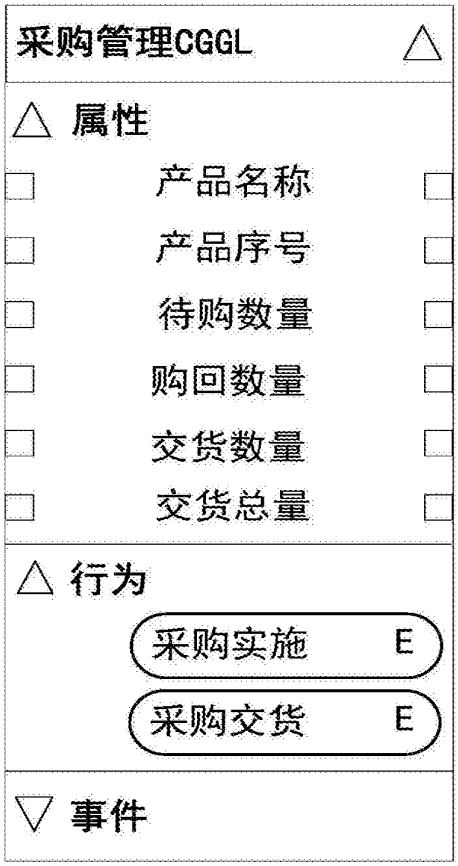


图9



图10

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图11

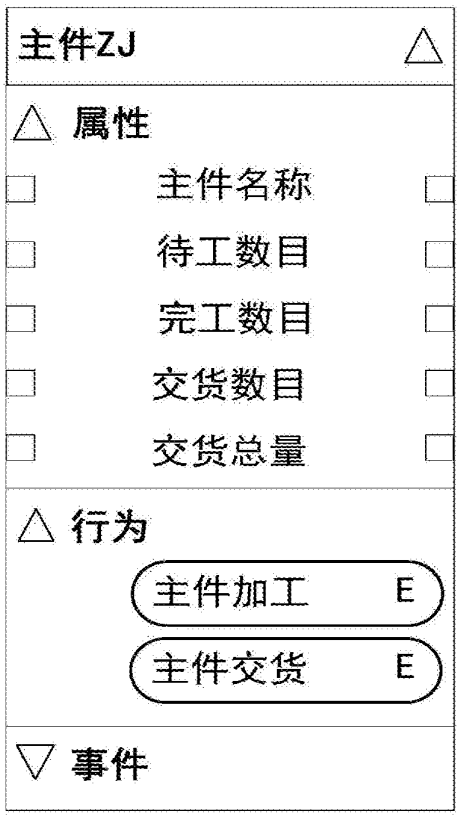


图12

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图13

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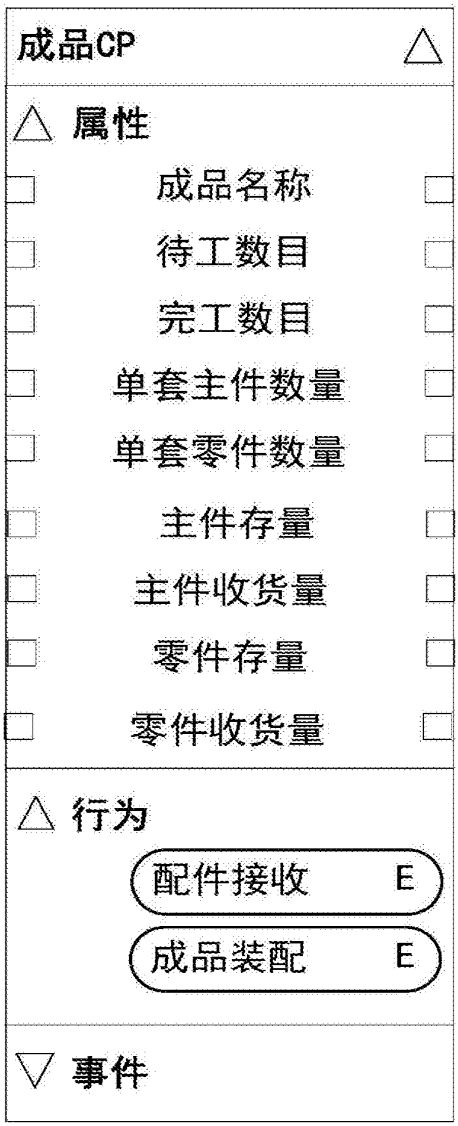


图14

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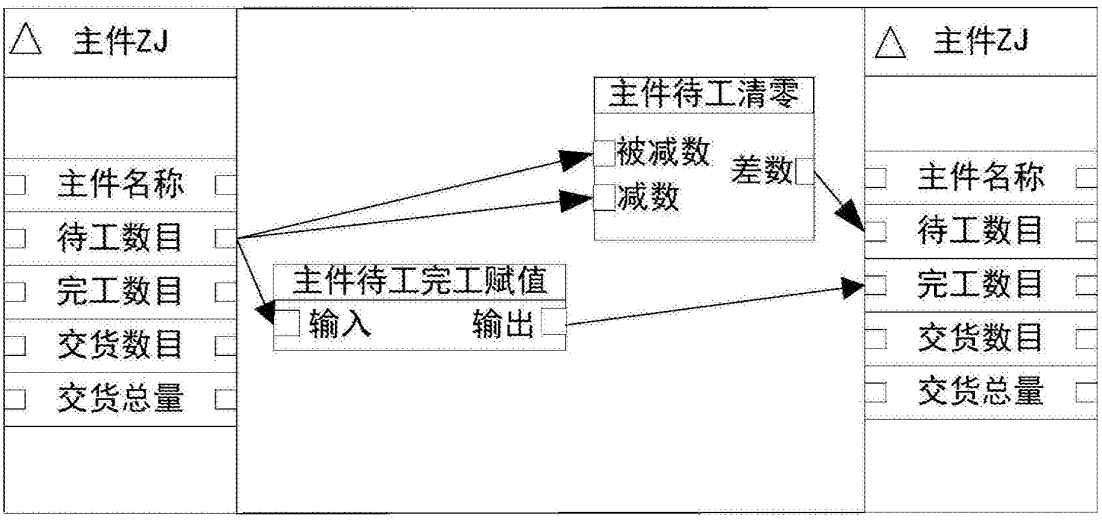


图15

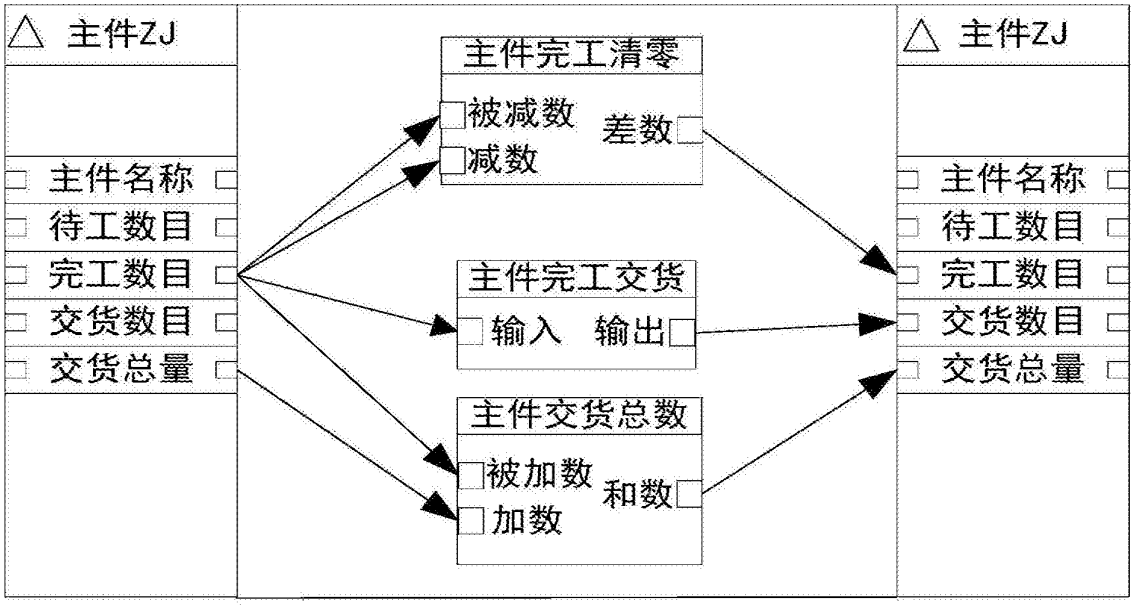


图16

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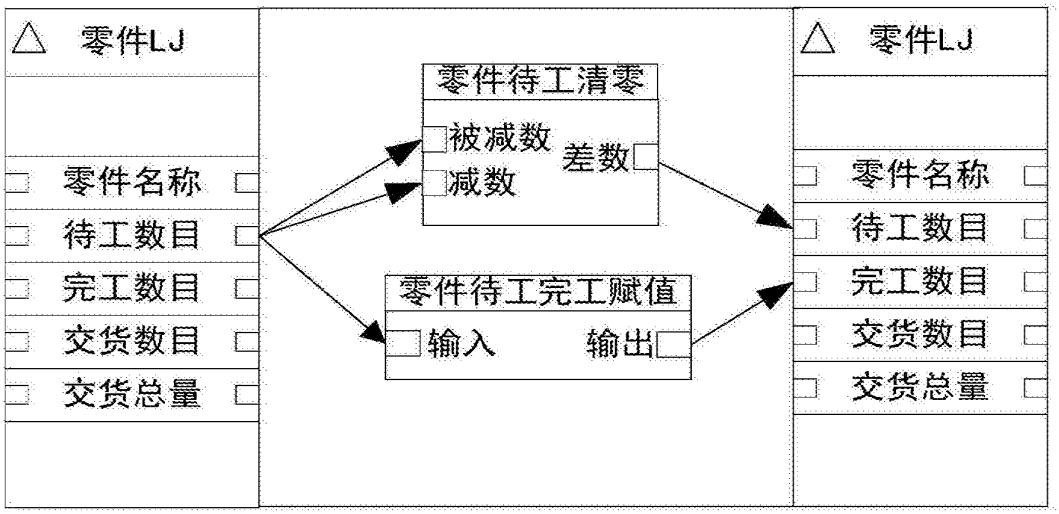


图17

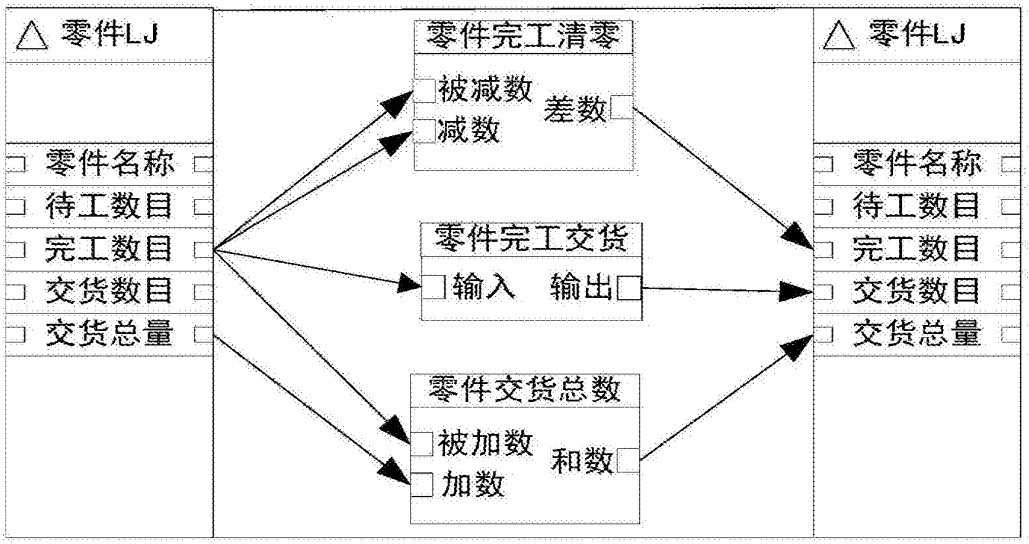


图18

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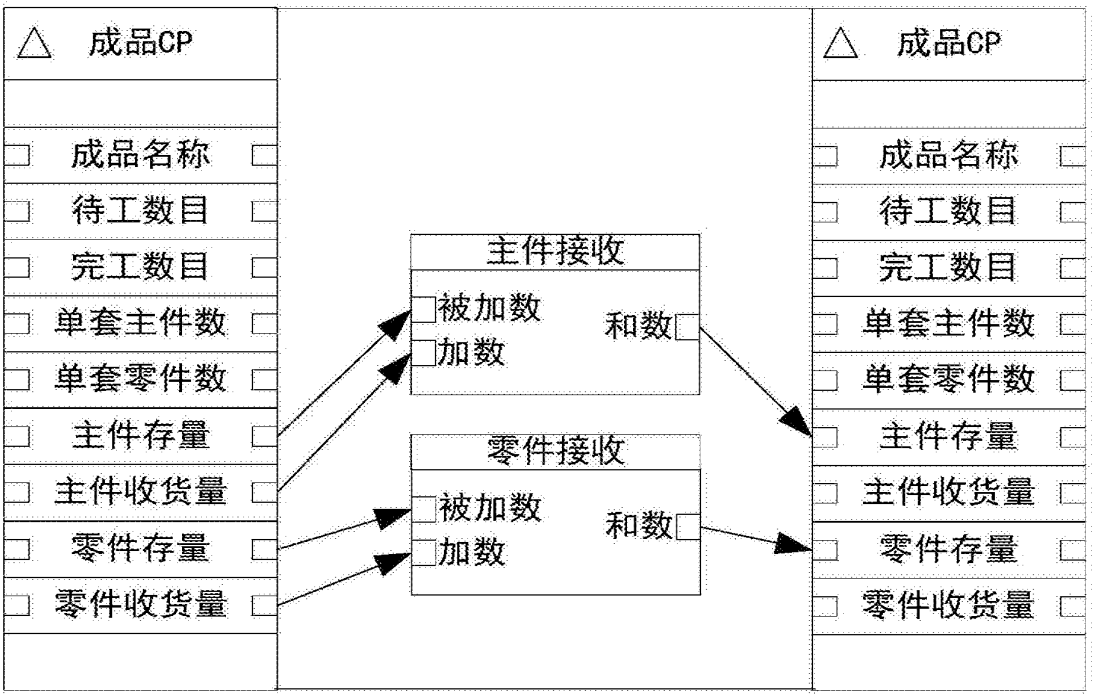


图19

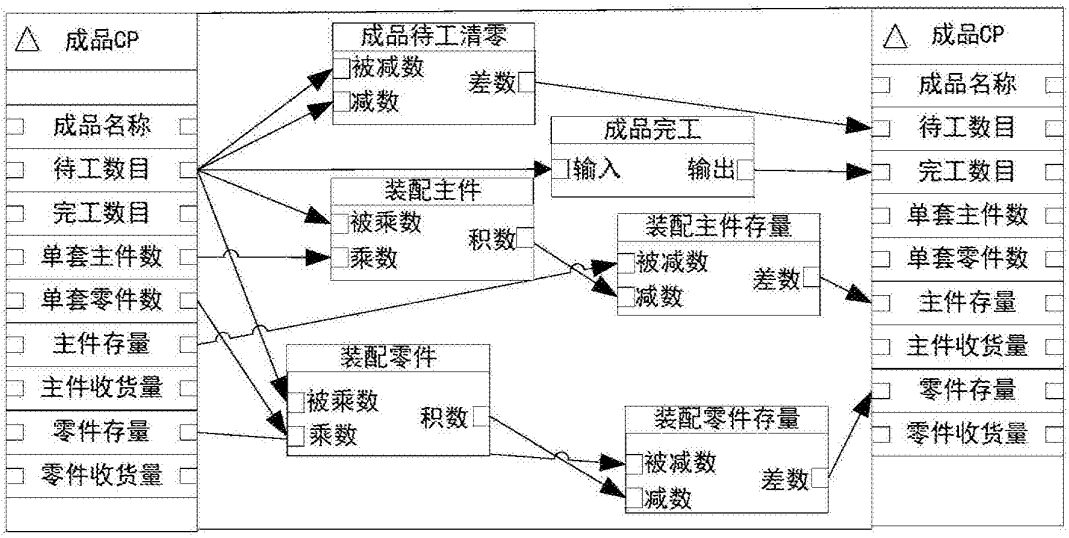


图20

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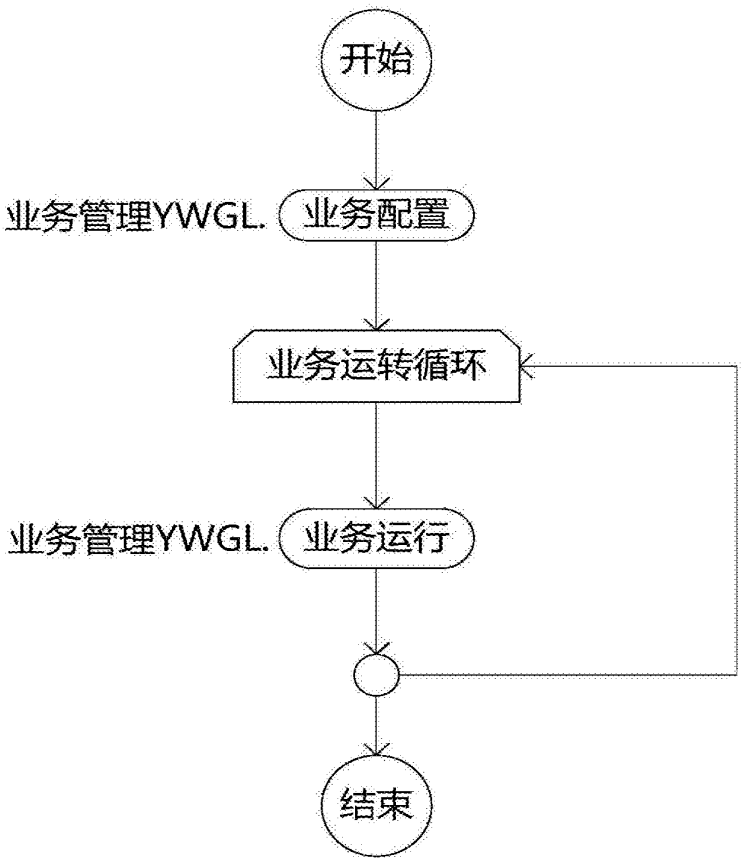


图21

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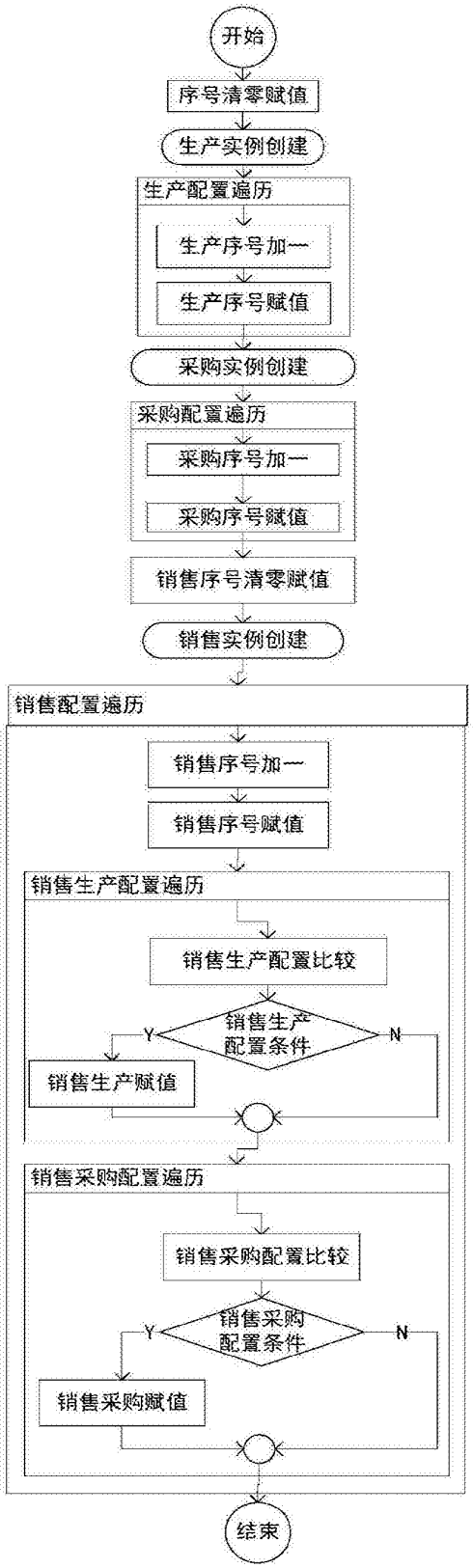


图22

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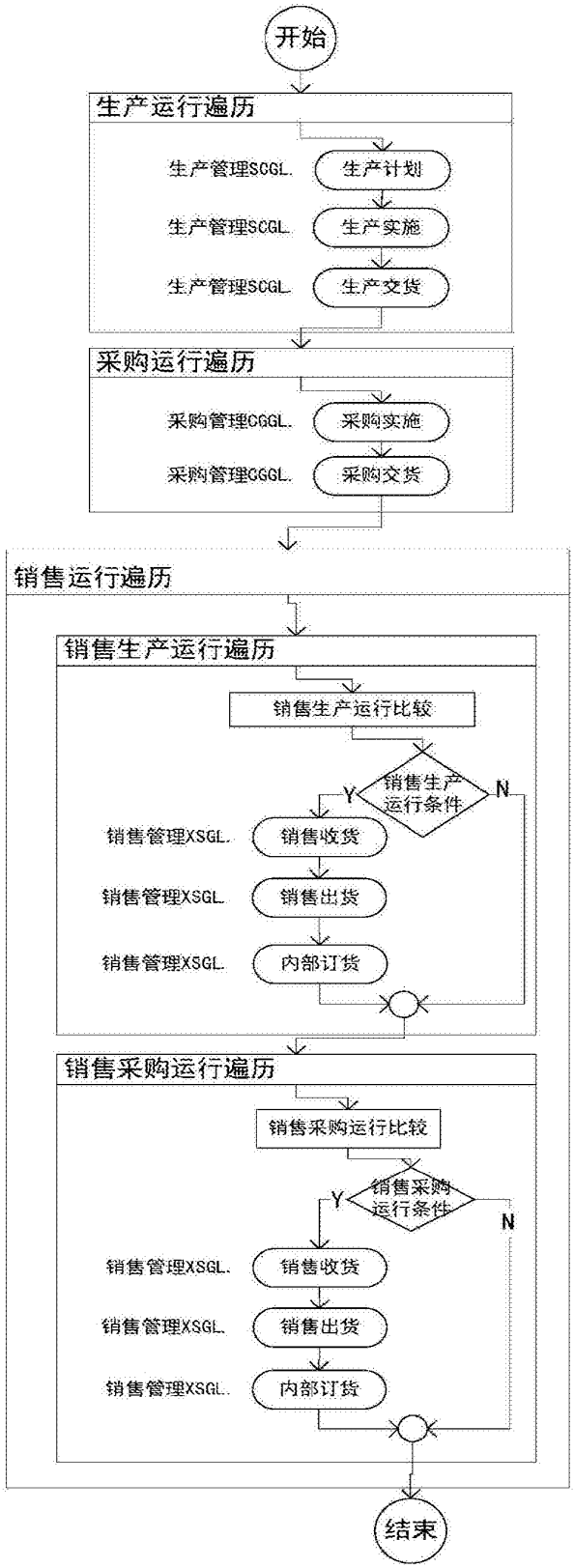


图23

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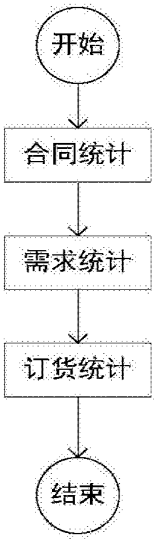


图24

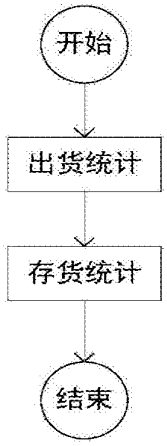


图25

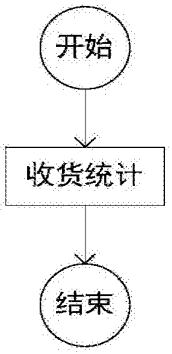


图26

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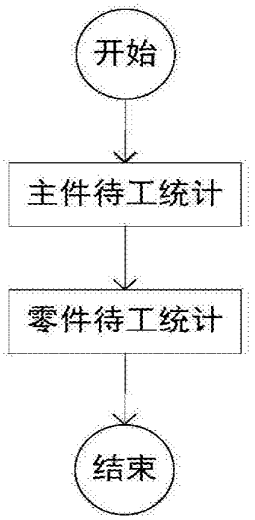


图27

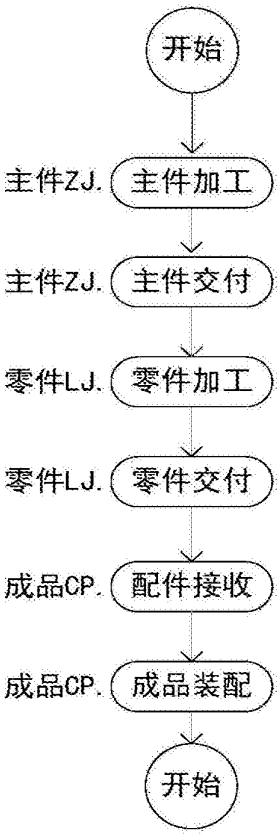


图28

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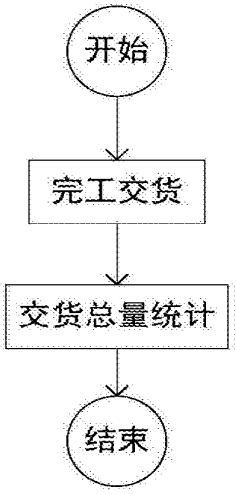


图29

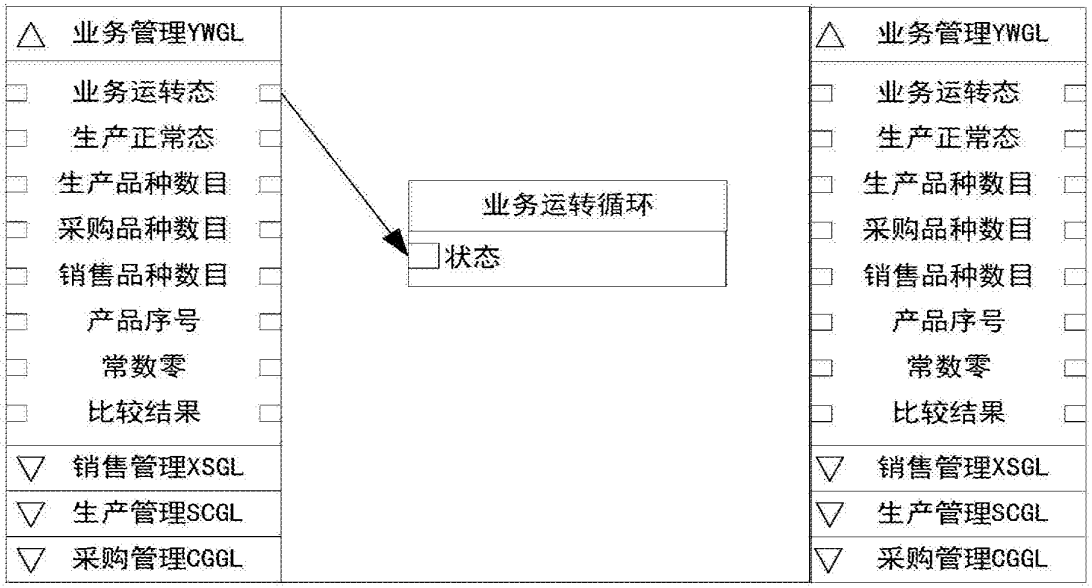


图30

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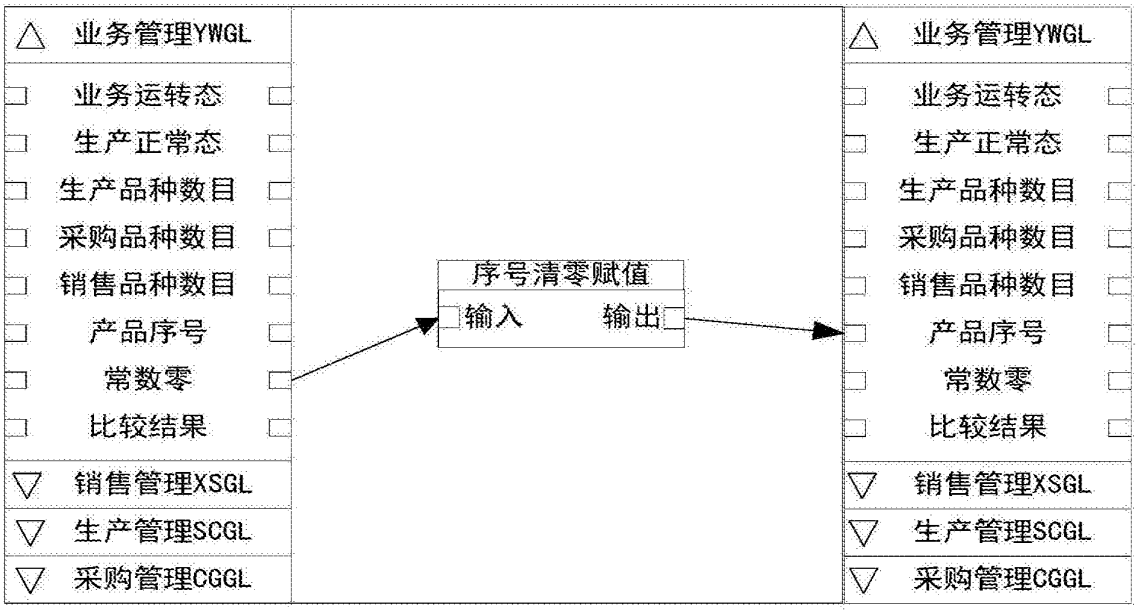


图31

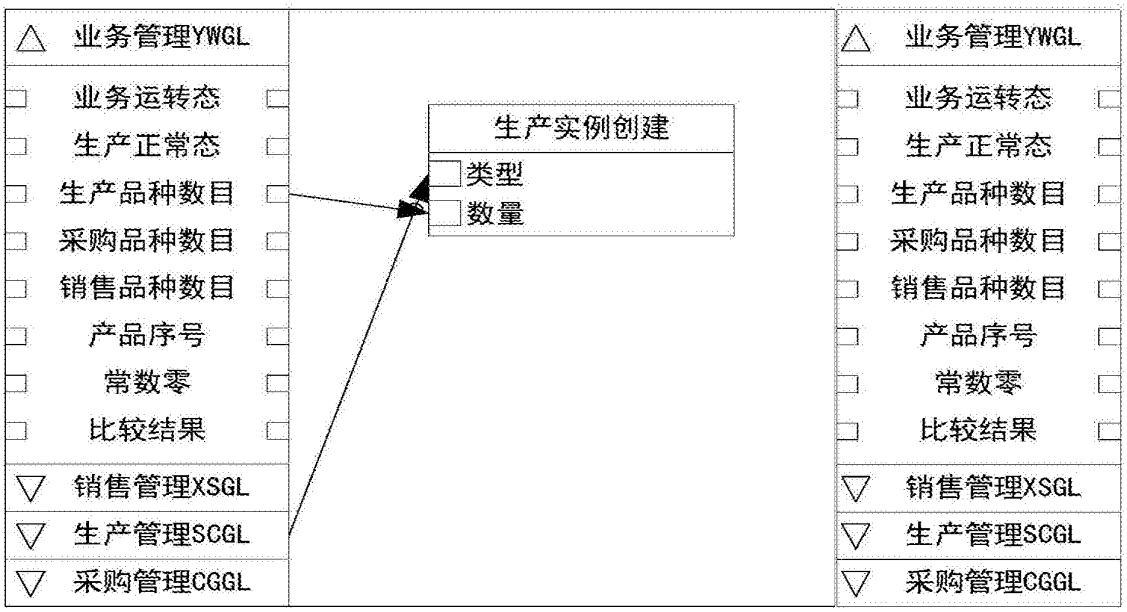


图32

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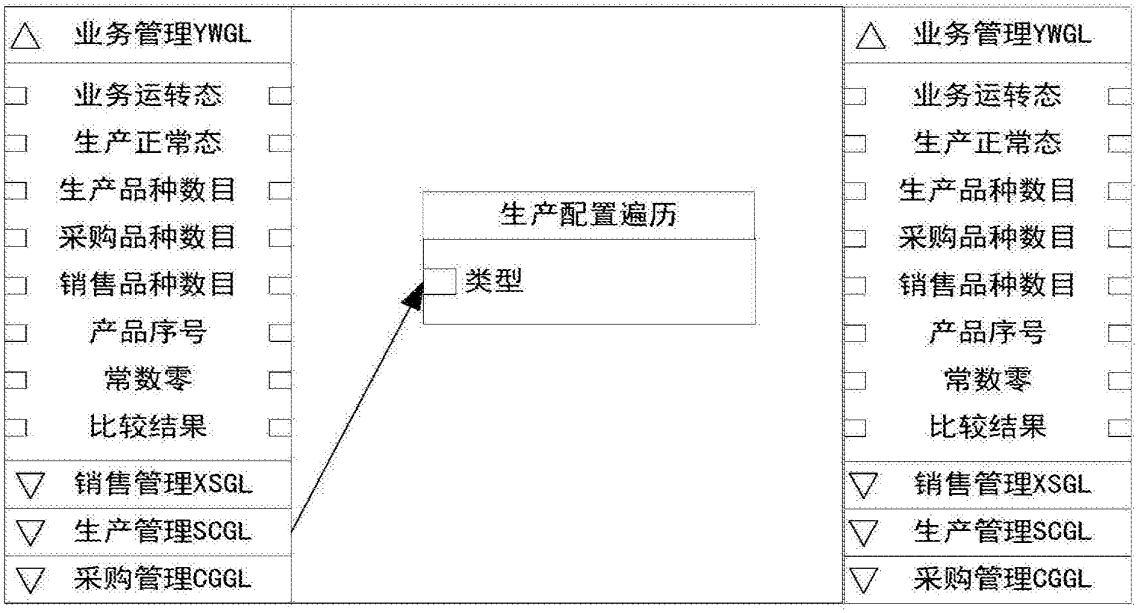


图33

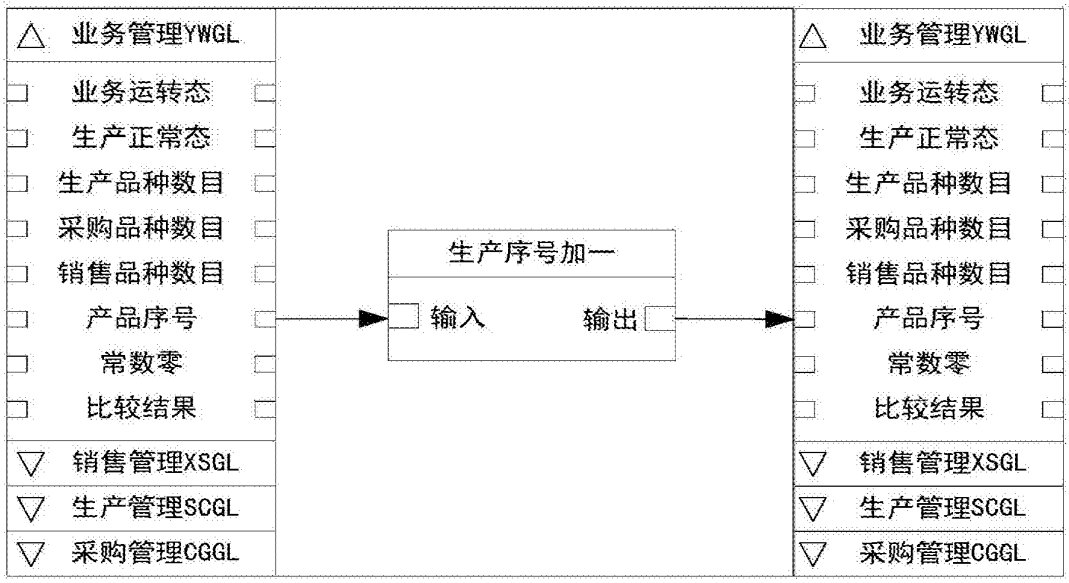


图34

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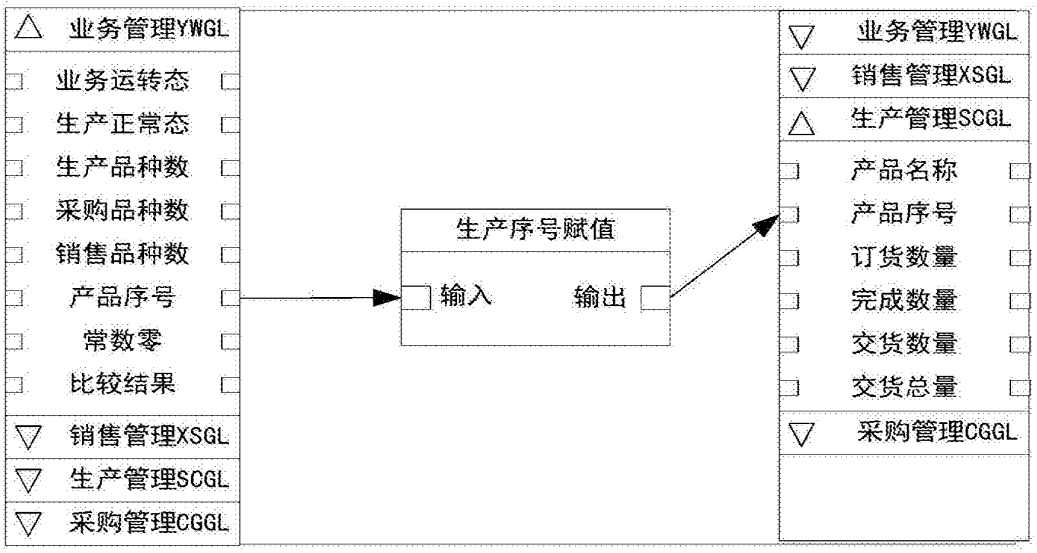


图35

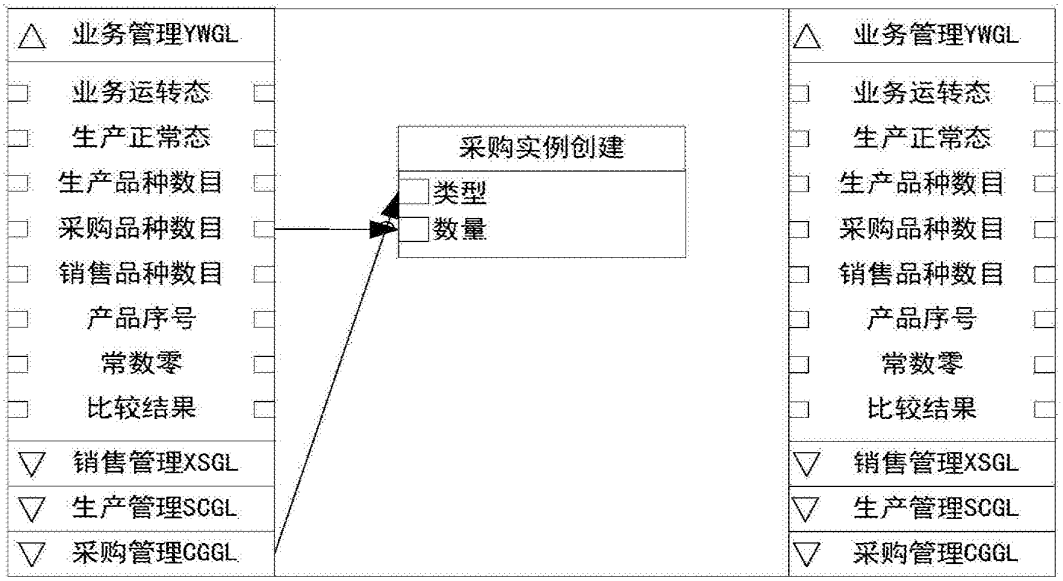


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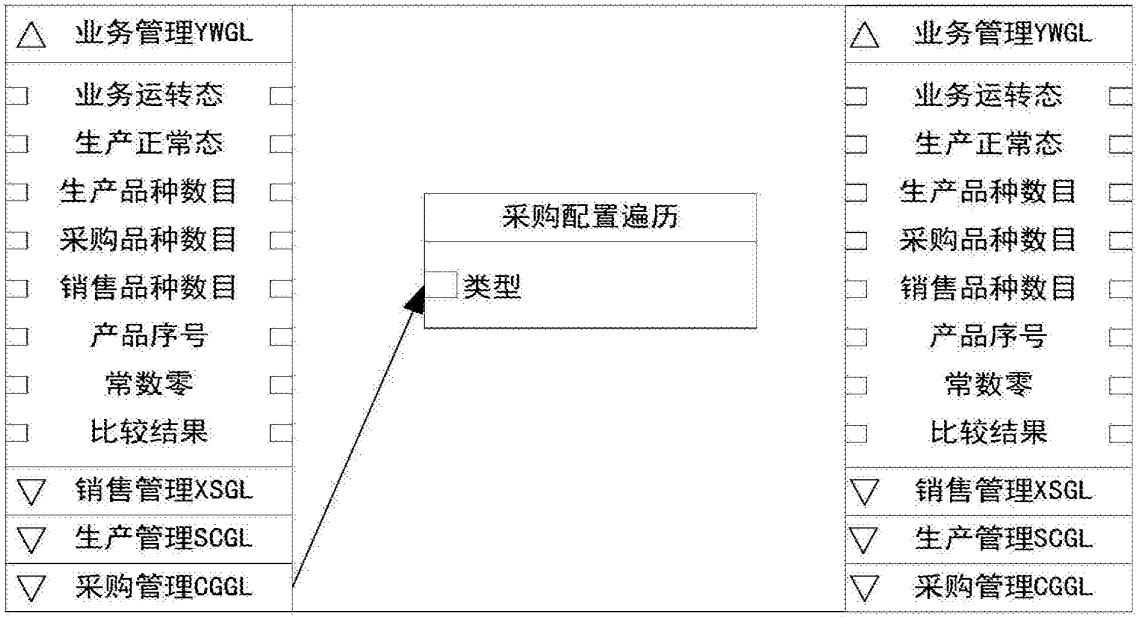


图37

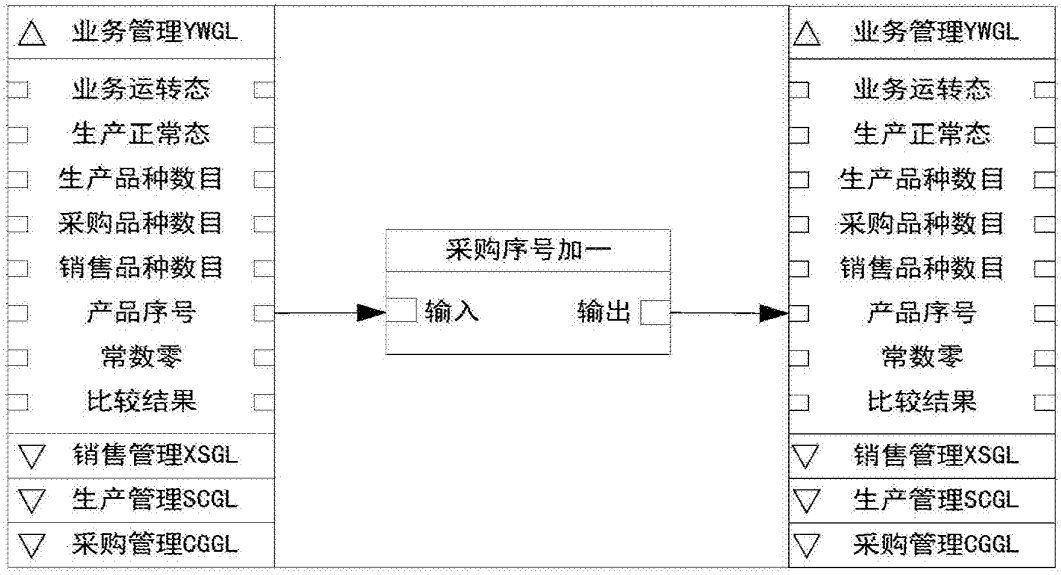


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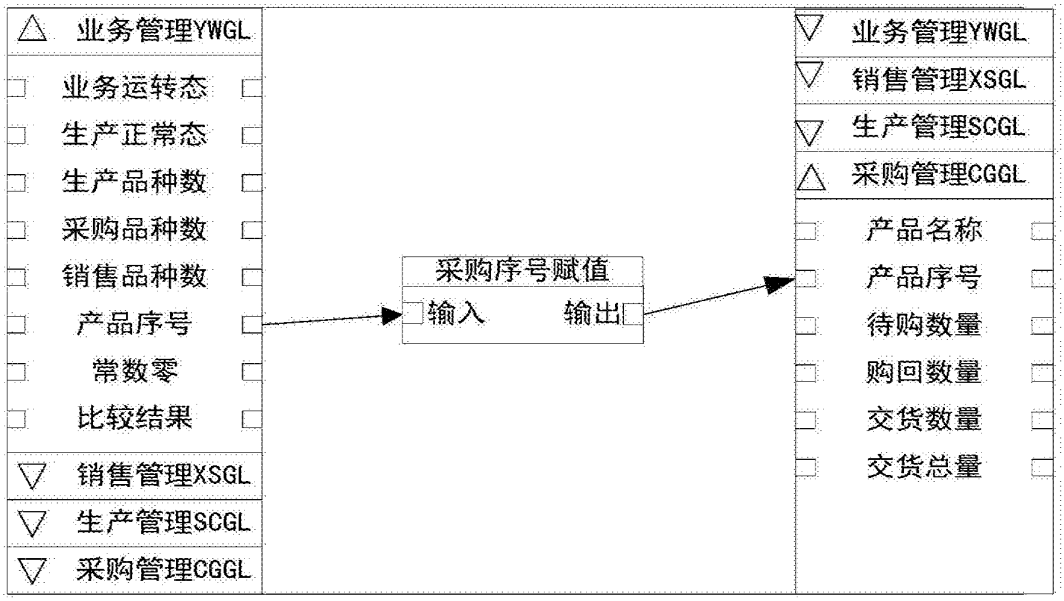


图39

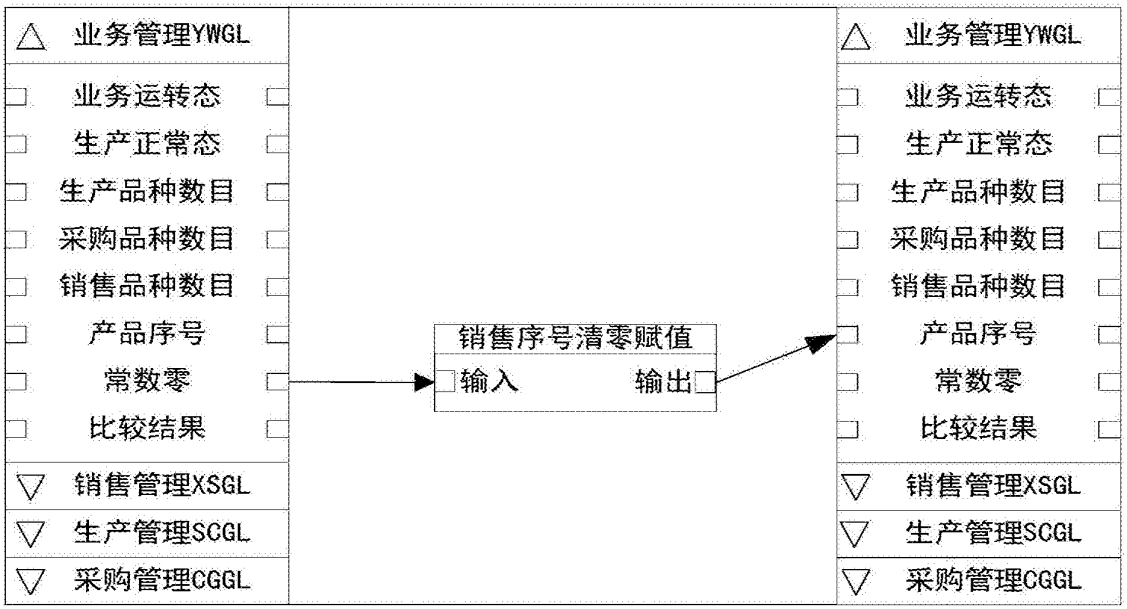


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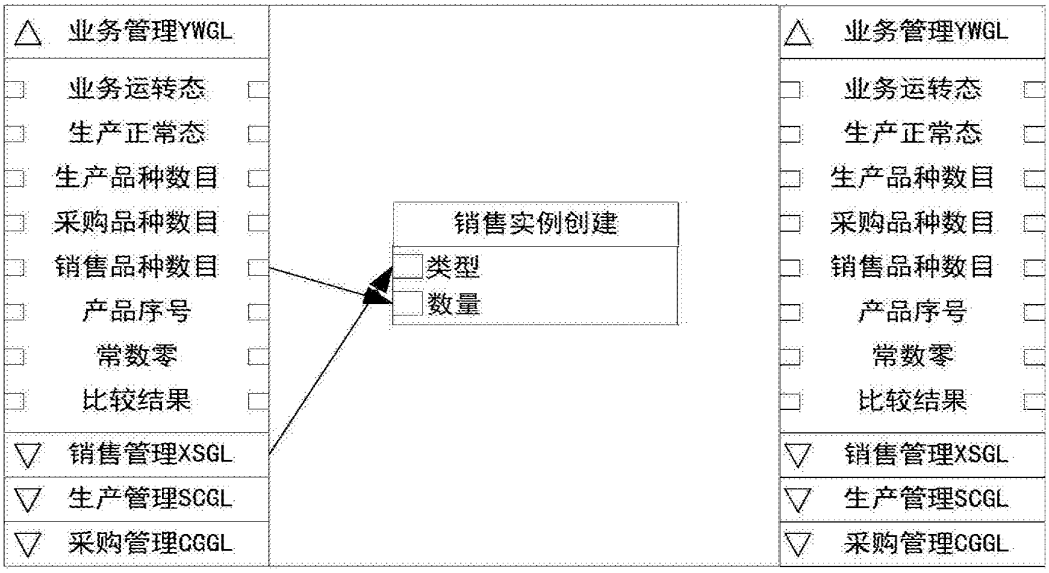


图41

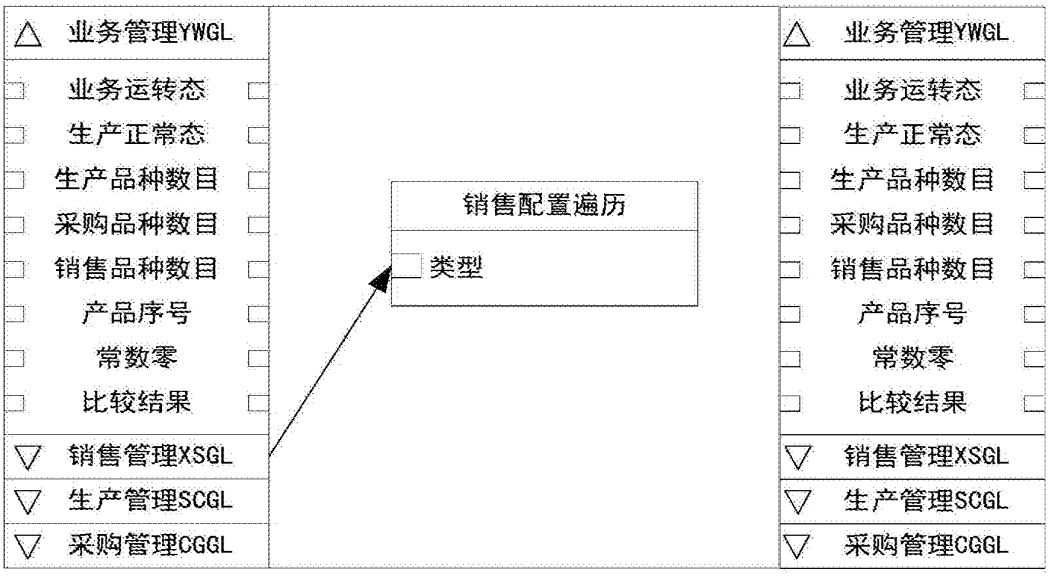


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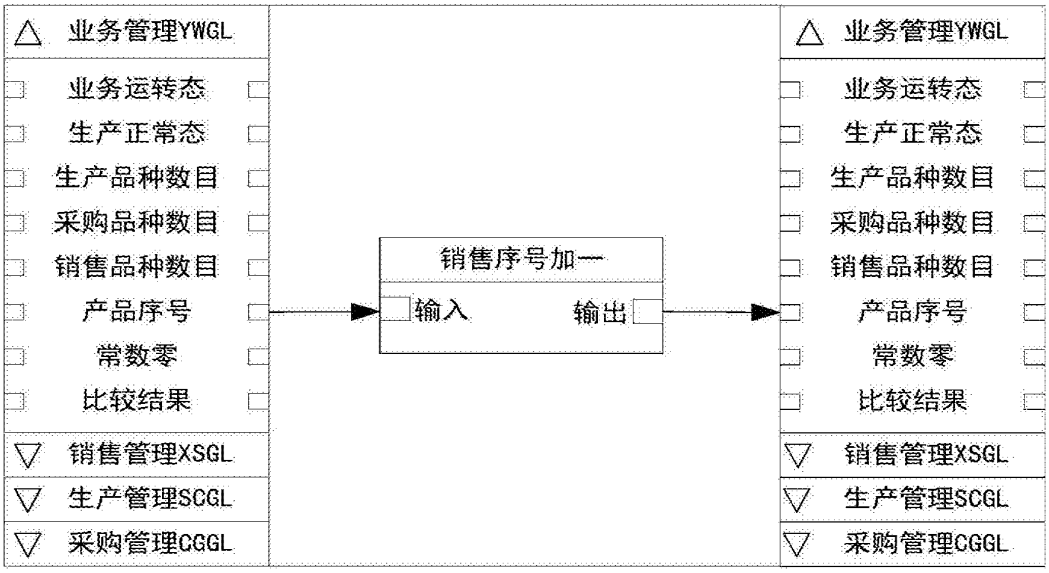


图43

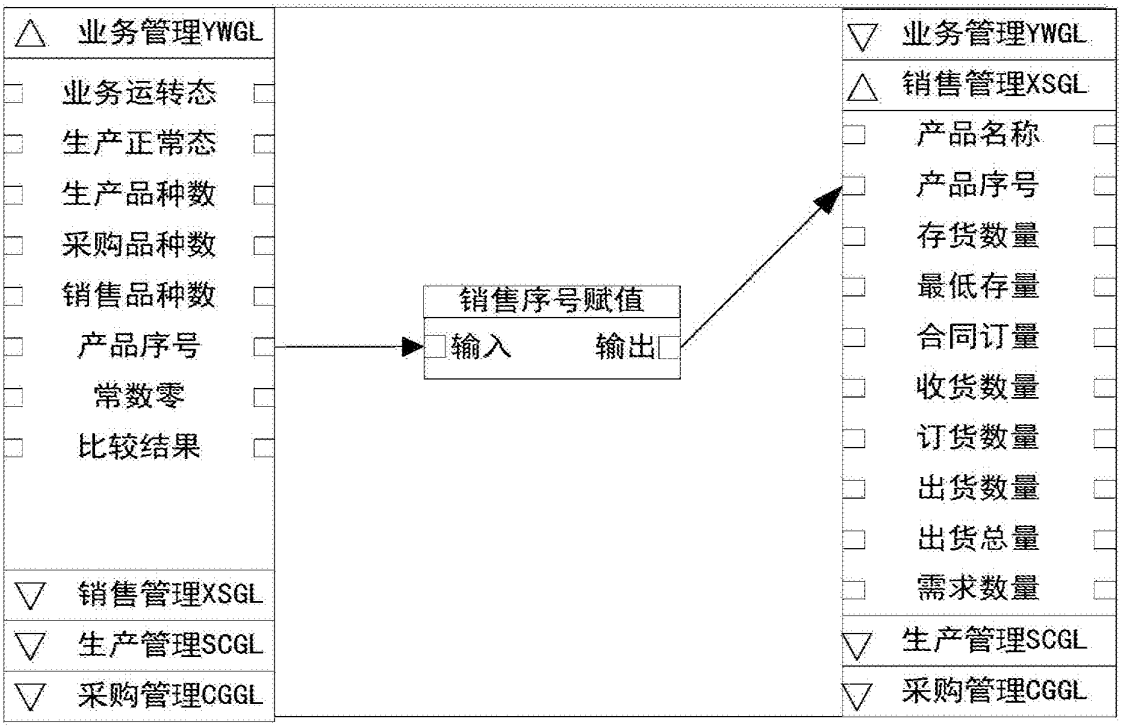


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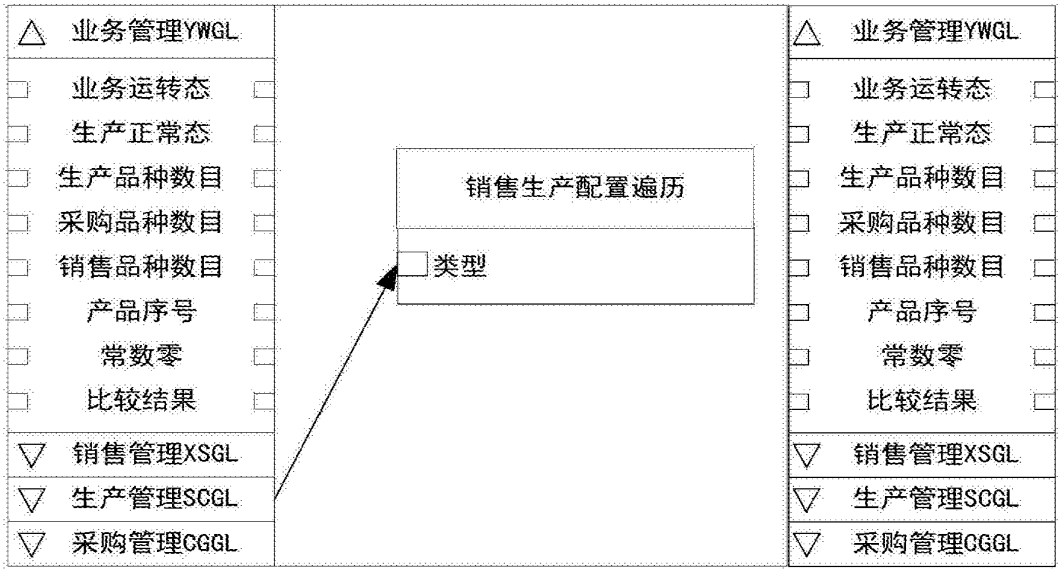


图45

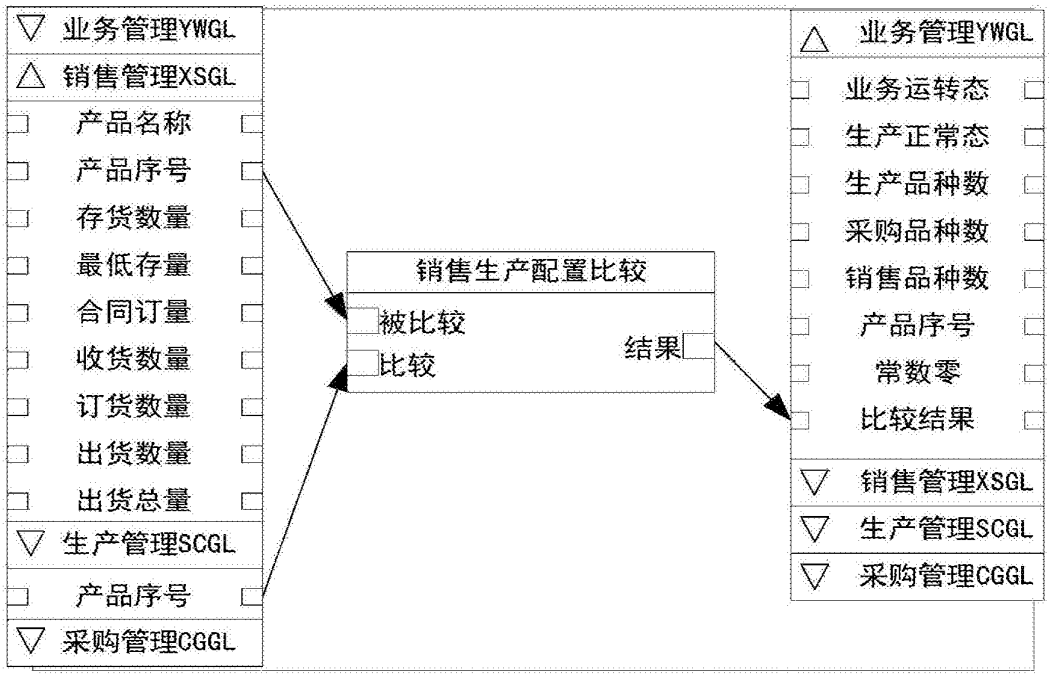


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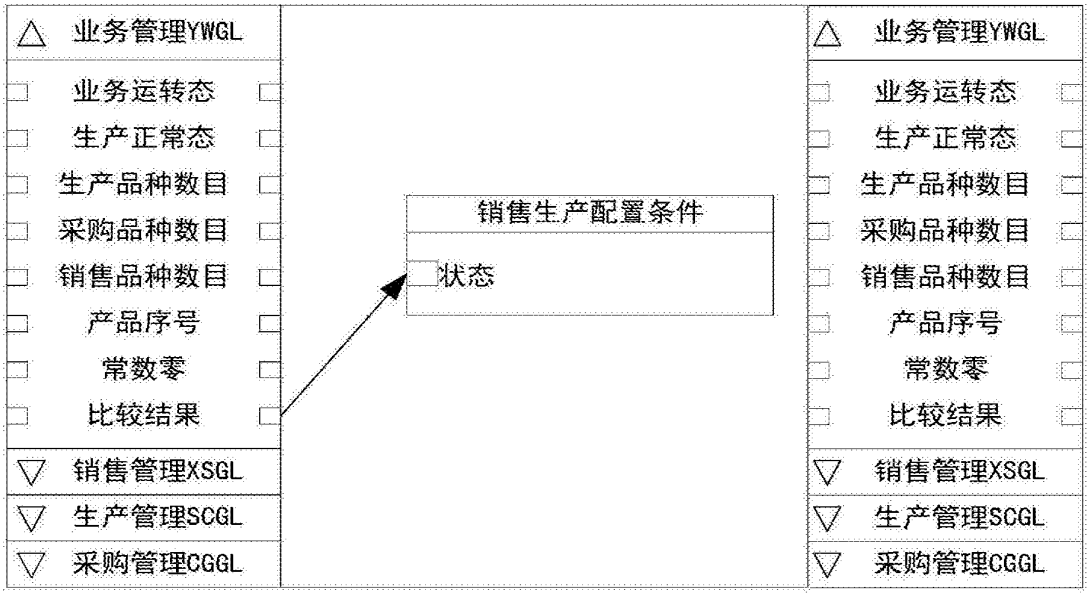


图47

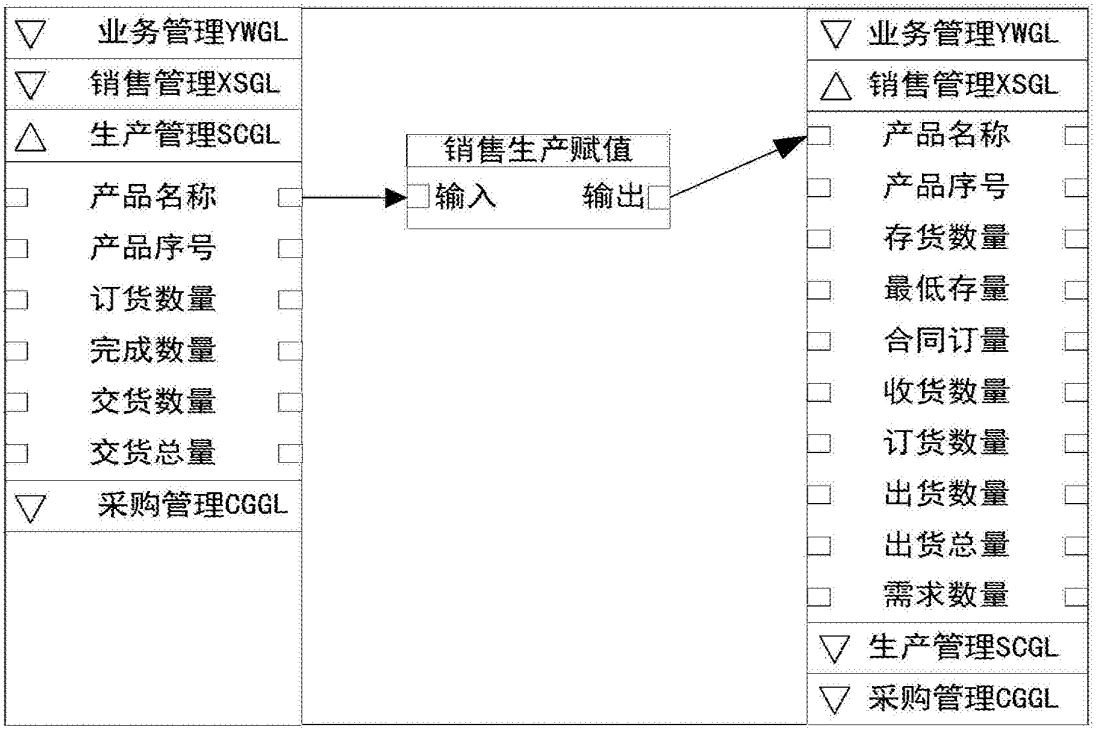


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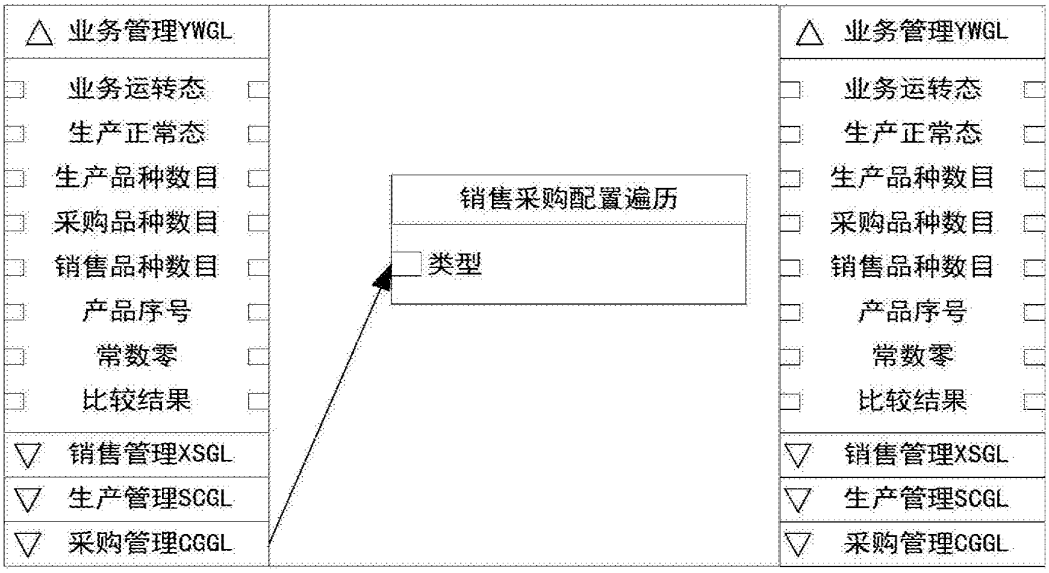


图49

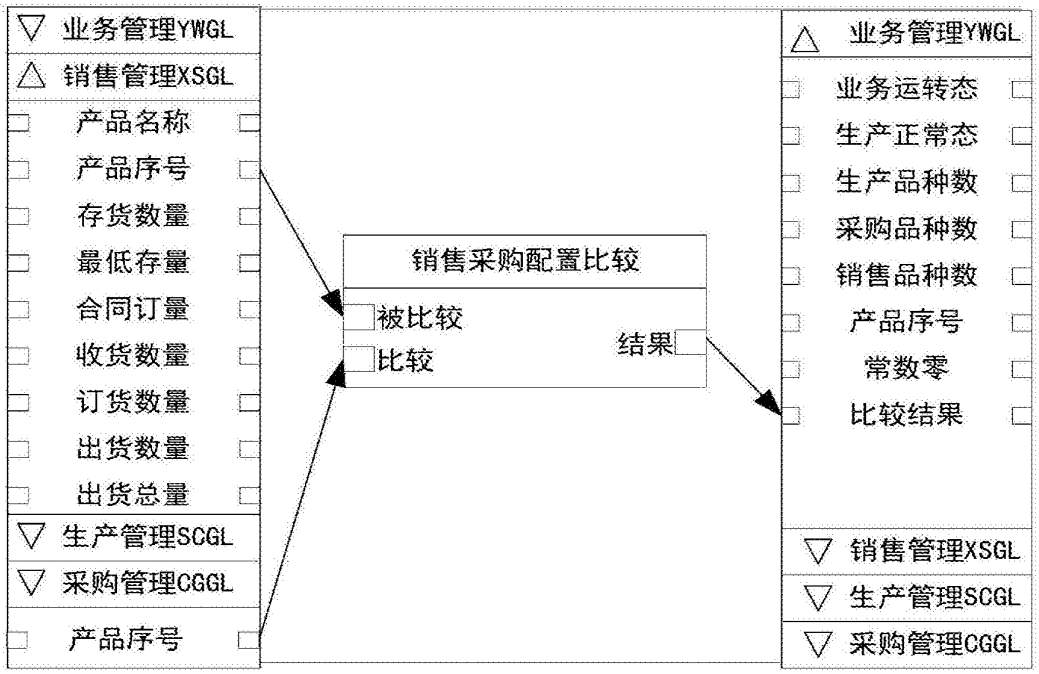


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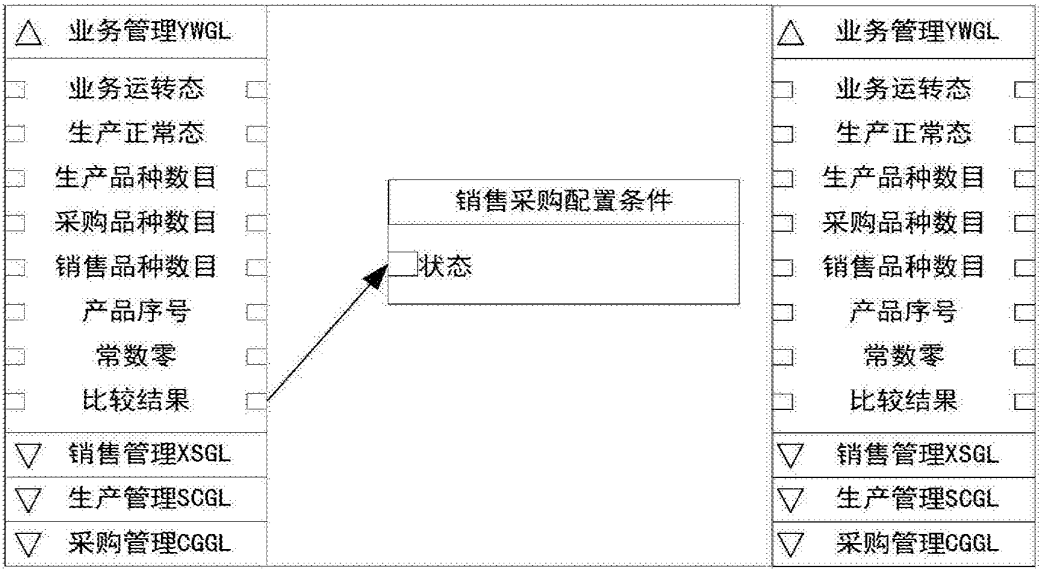


图51

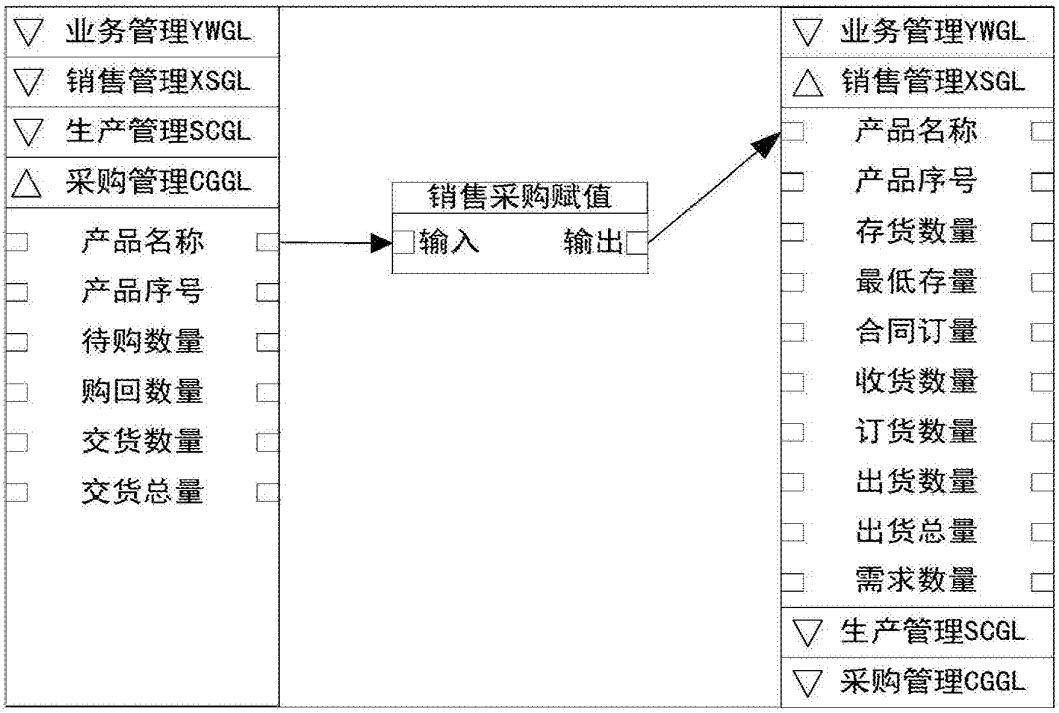


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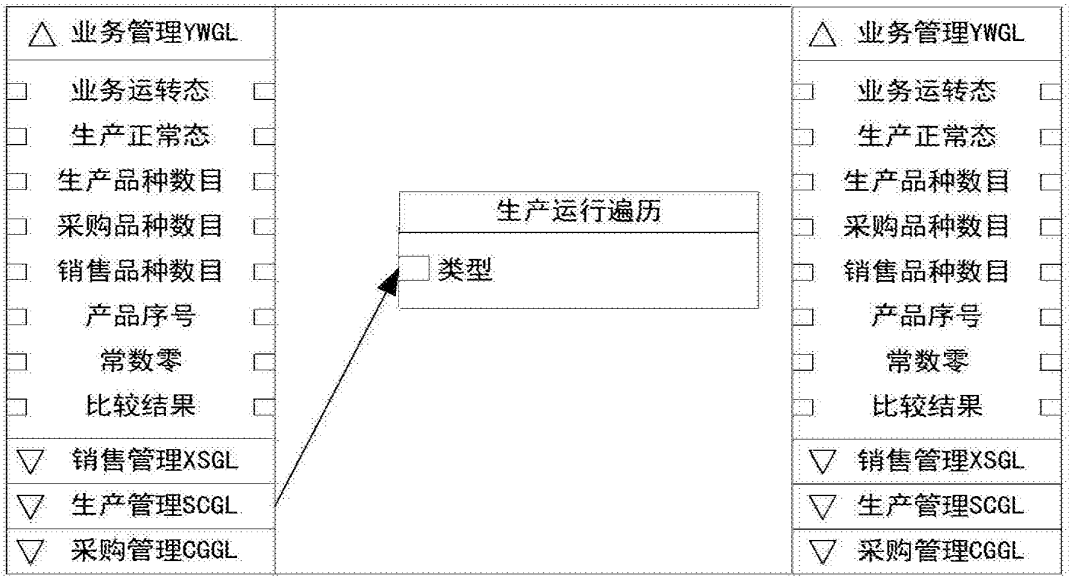


图53

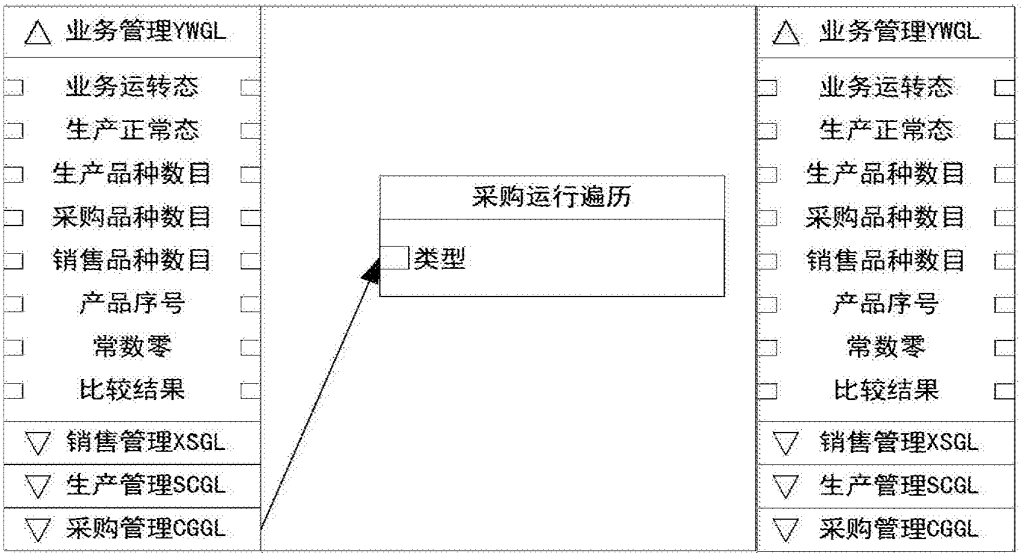


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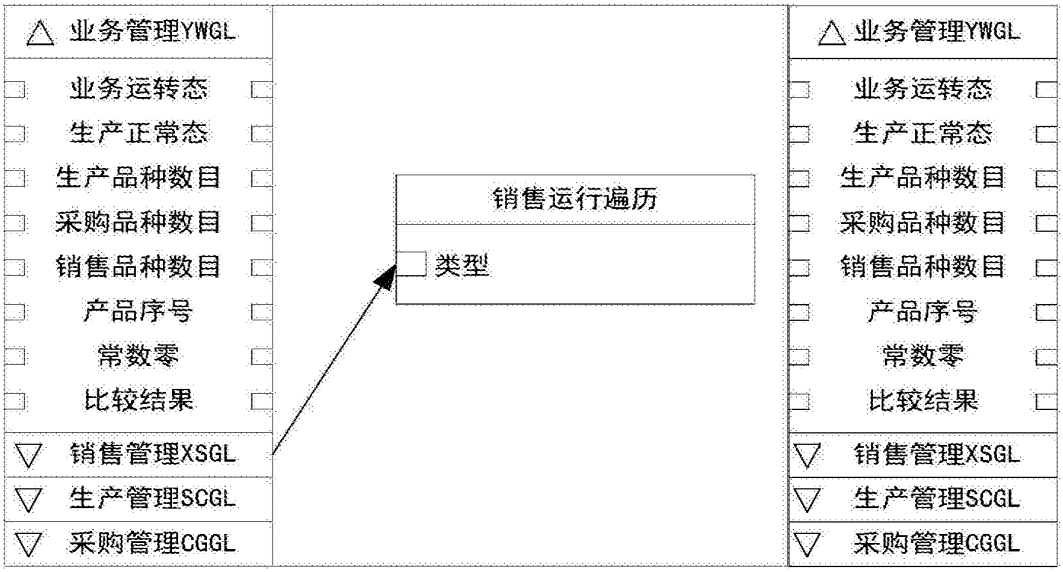


图55

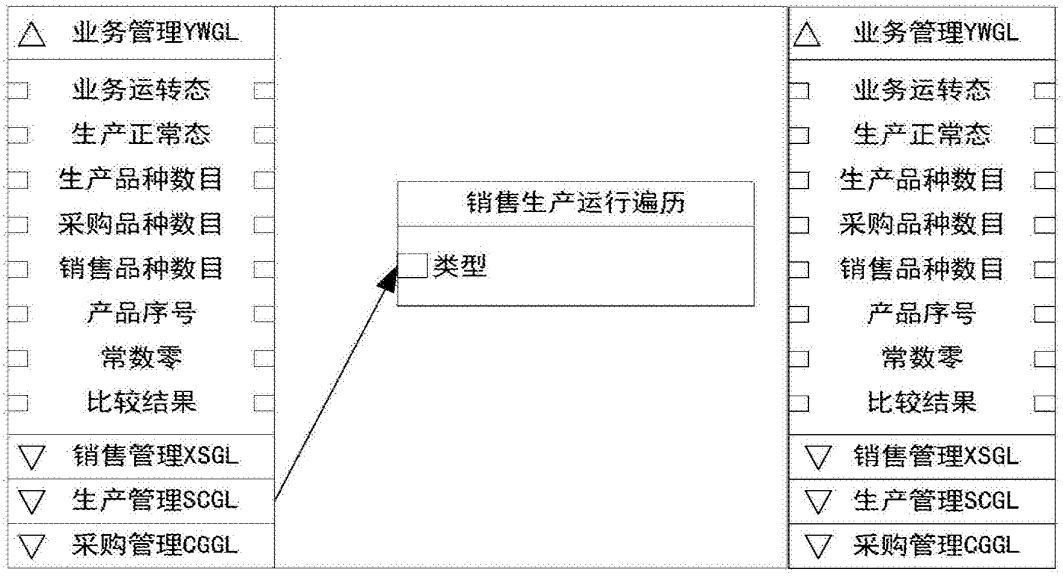


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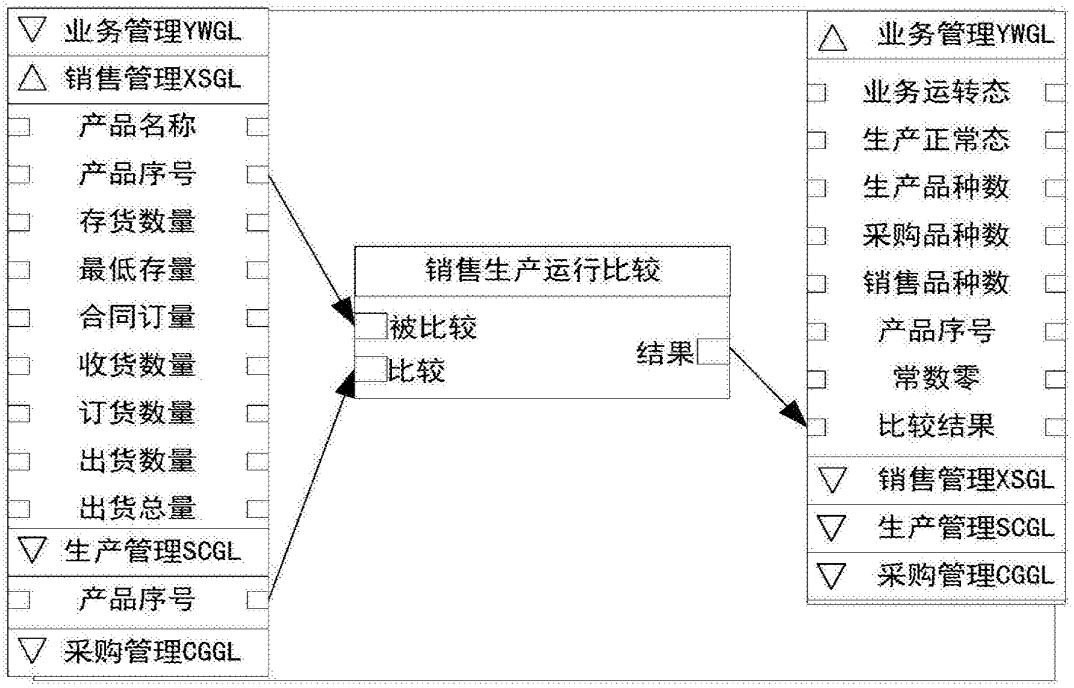


图57

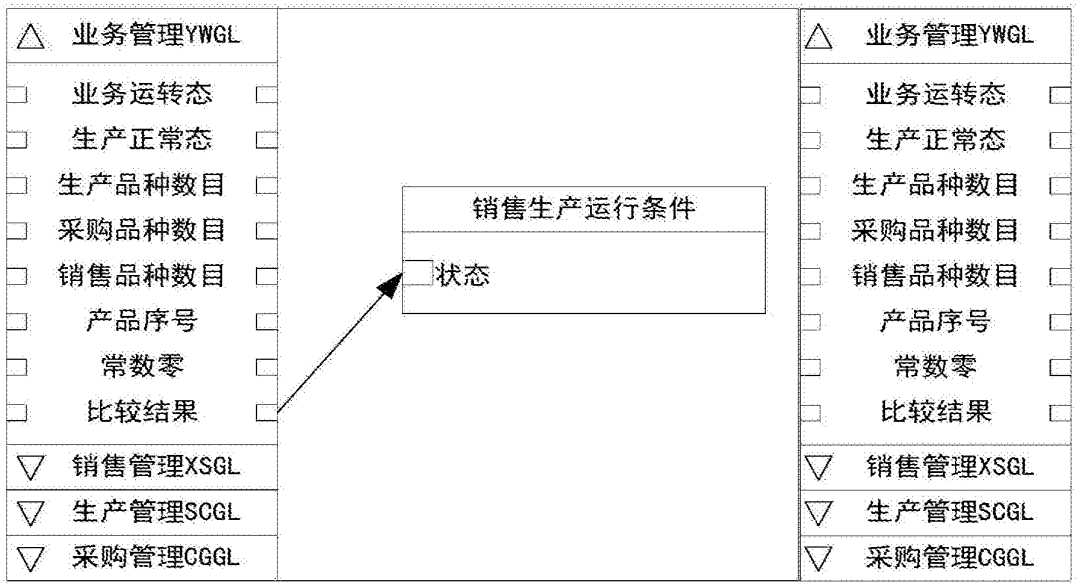


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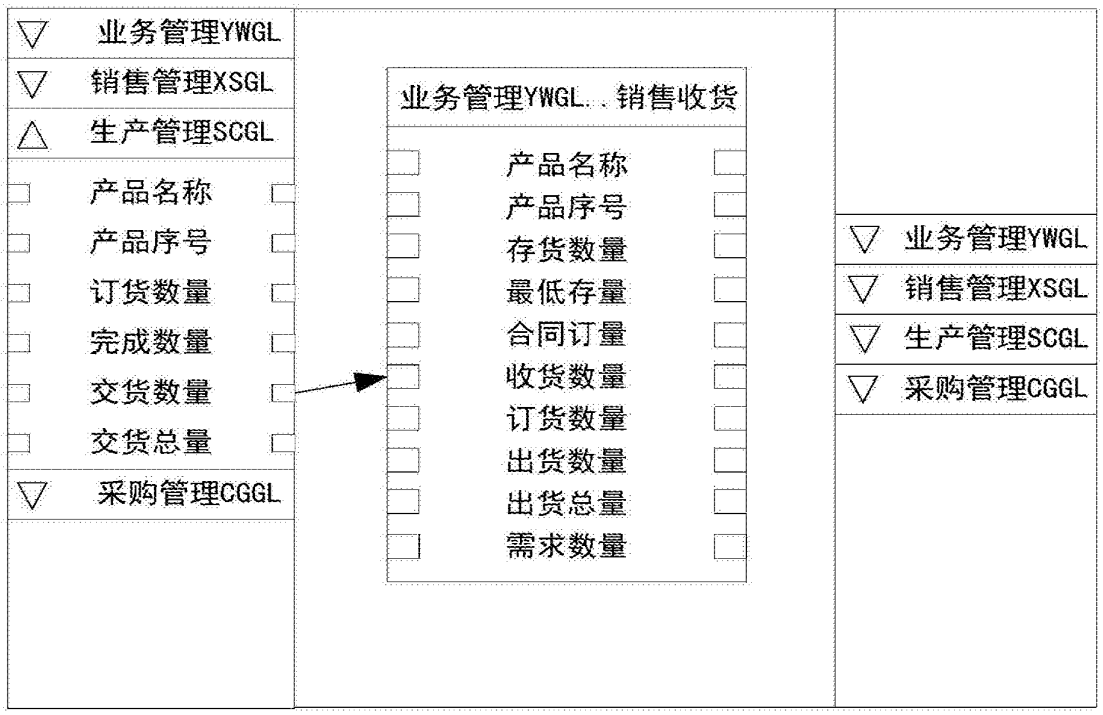


图59

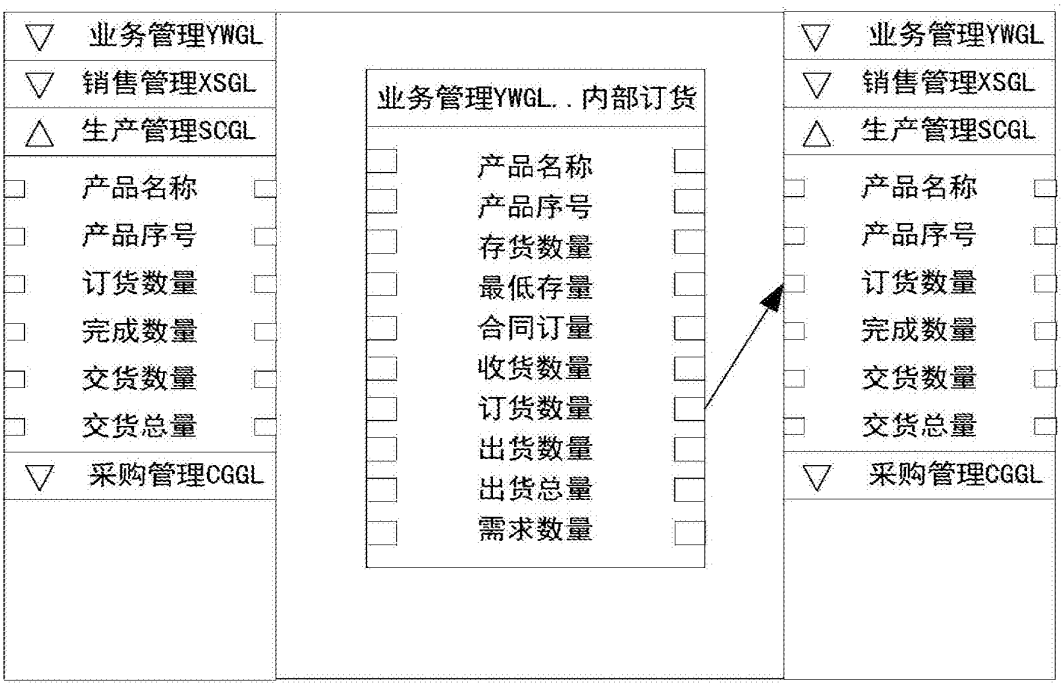


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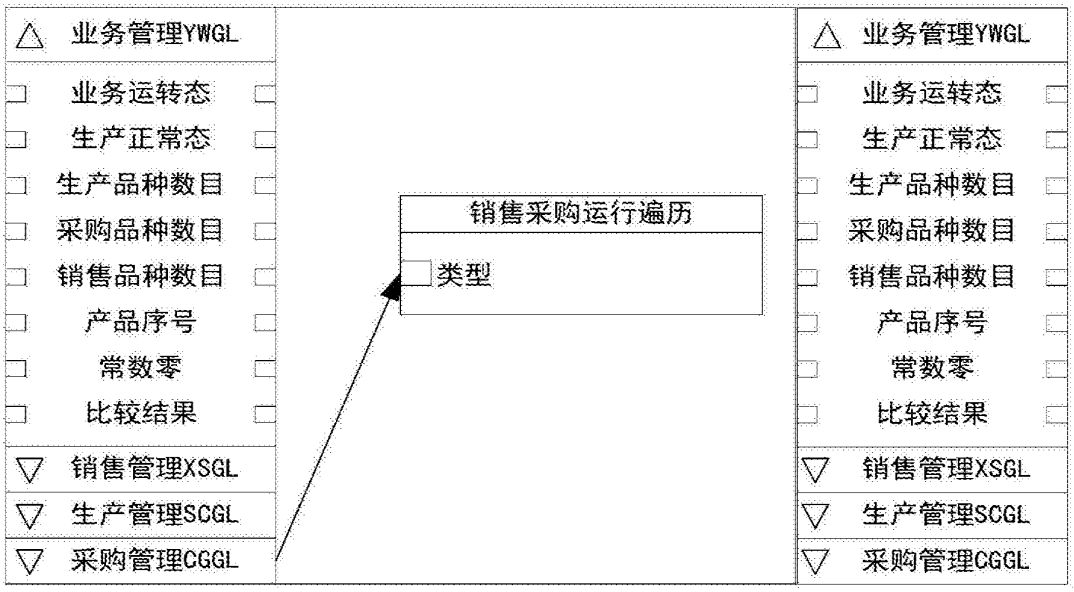


图61

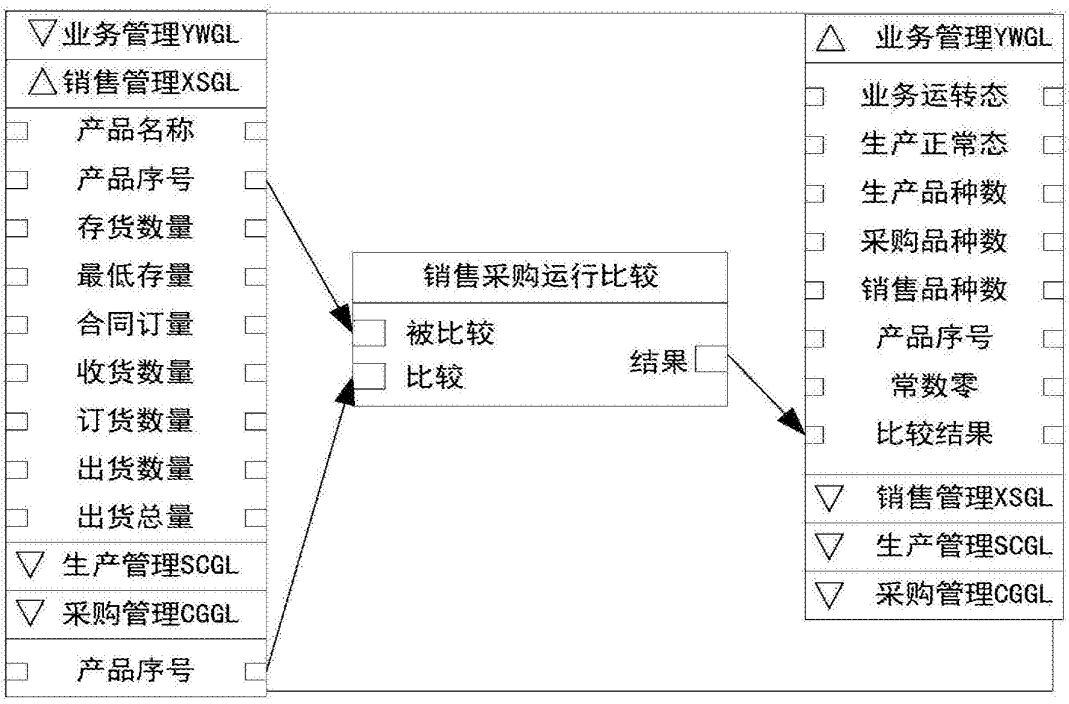


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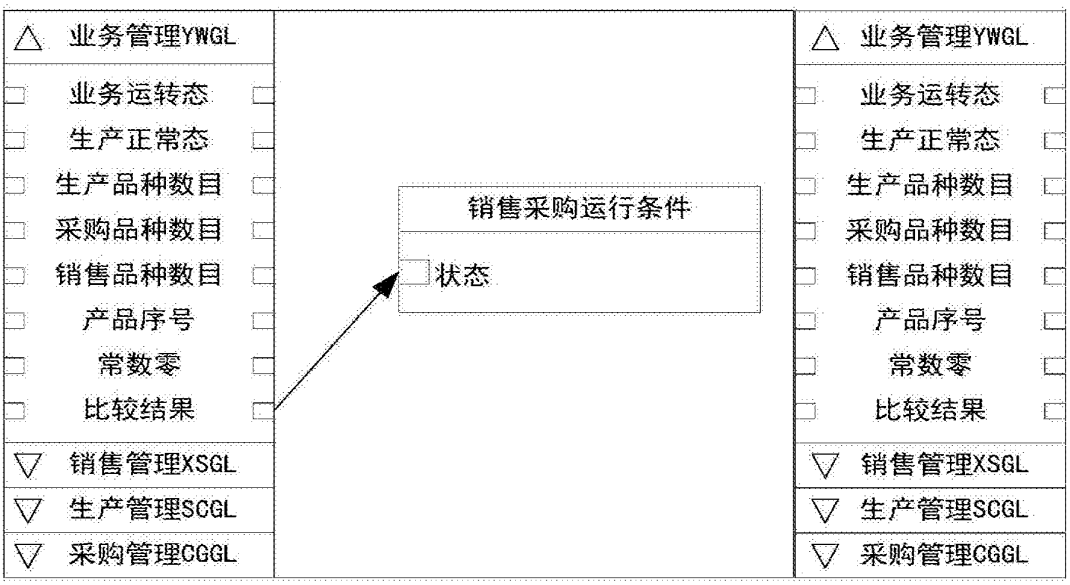


图63

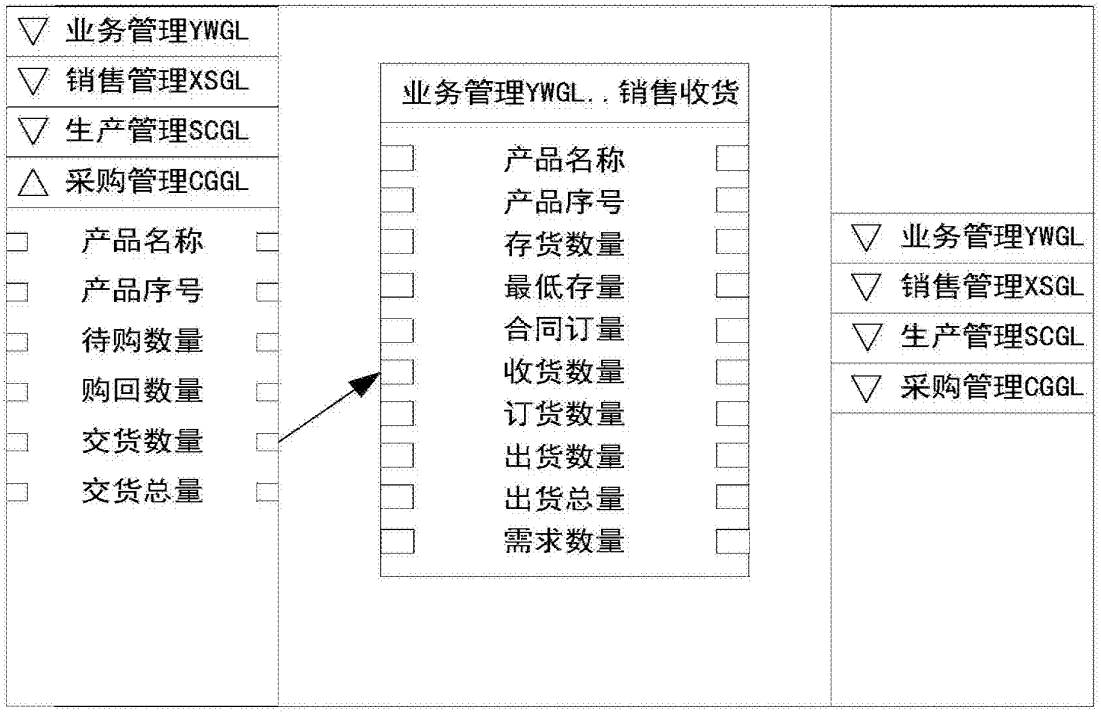


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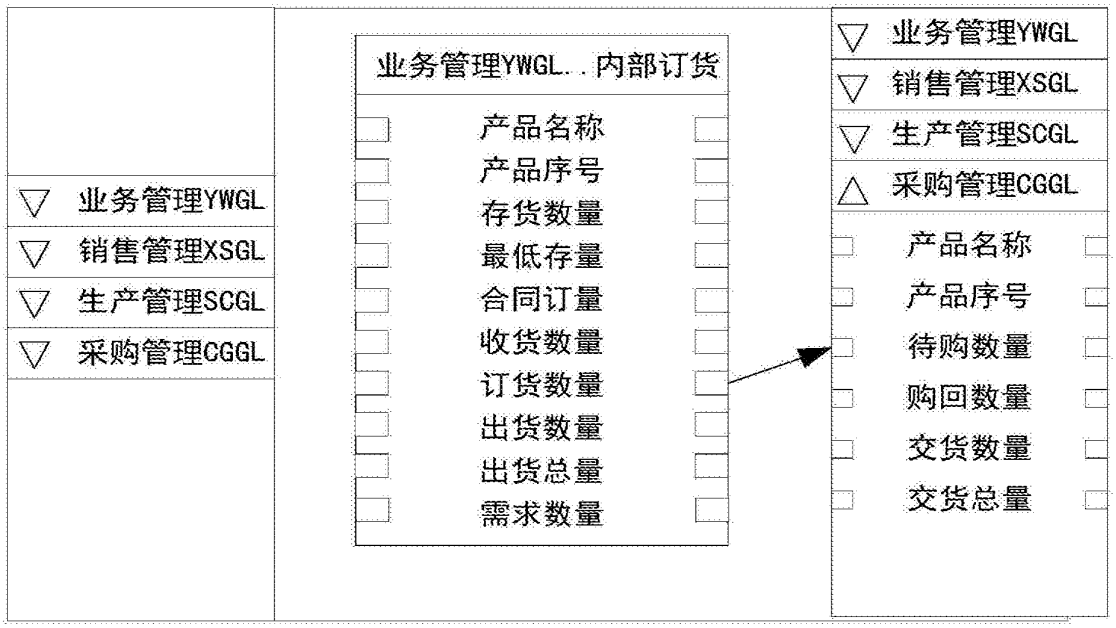


图65

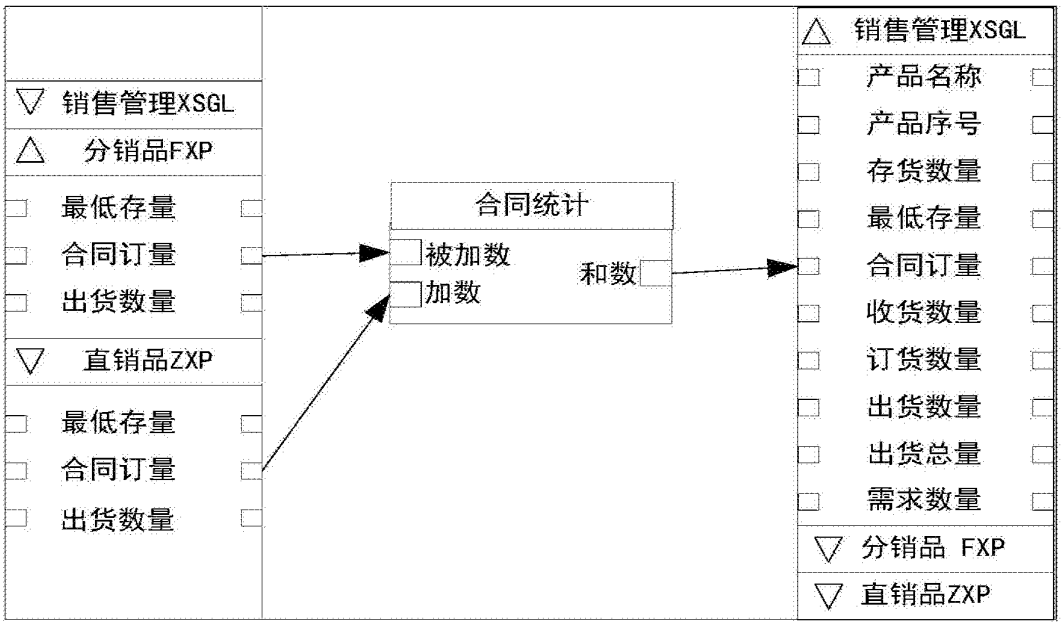


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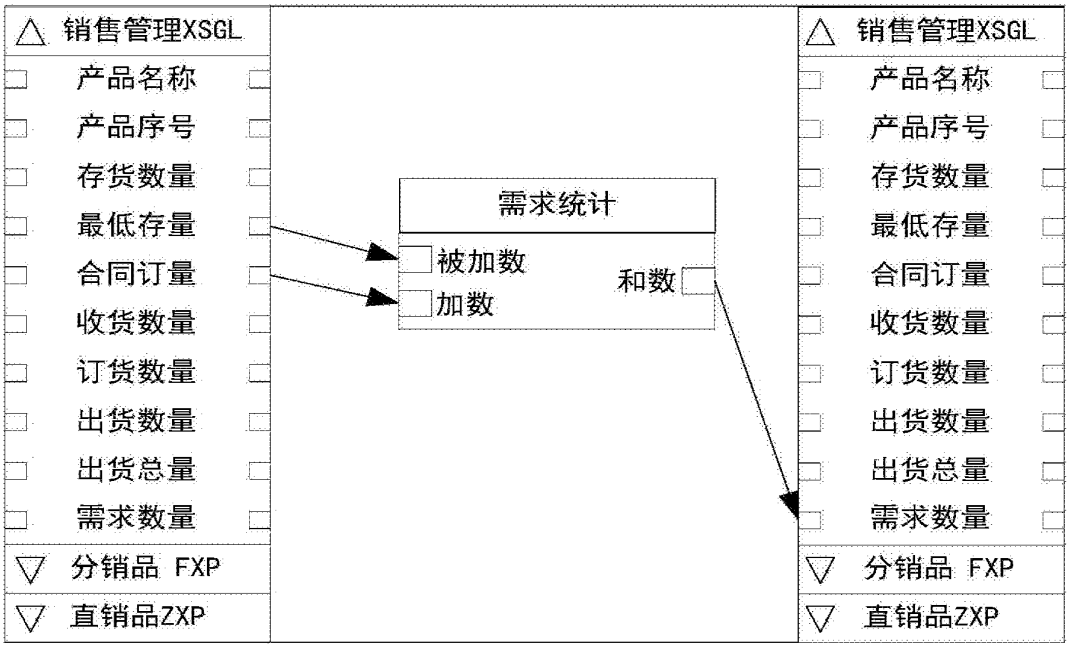


图67

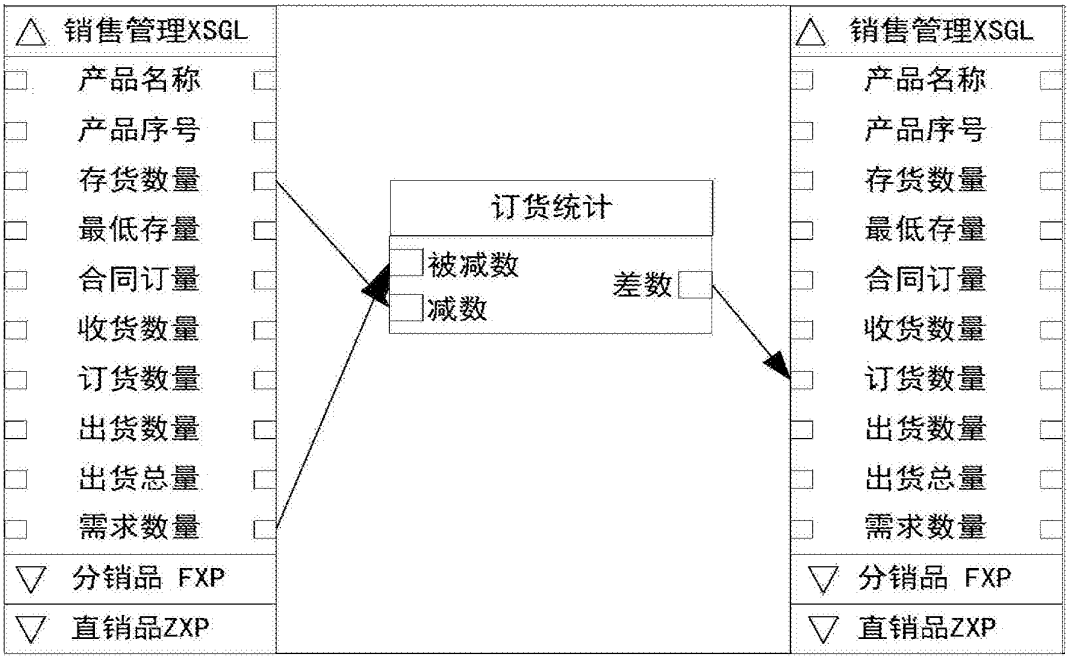


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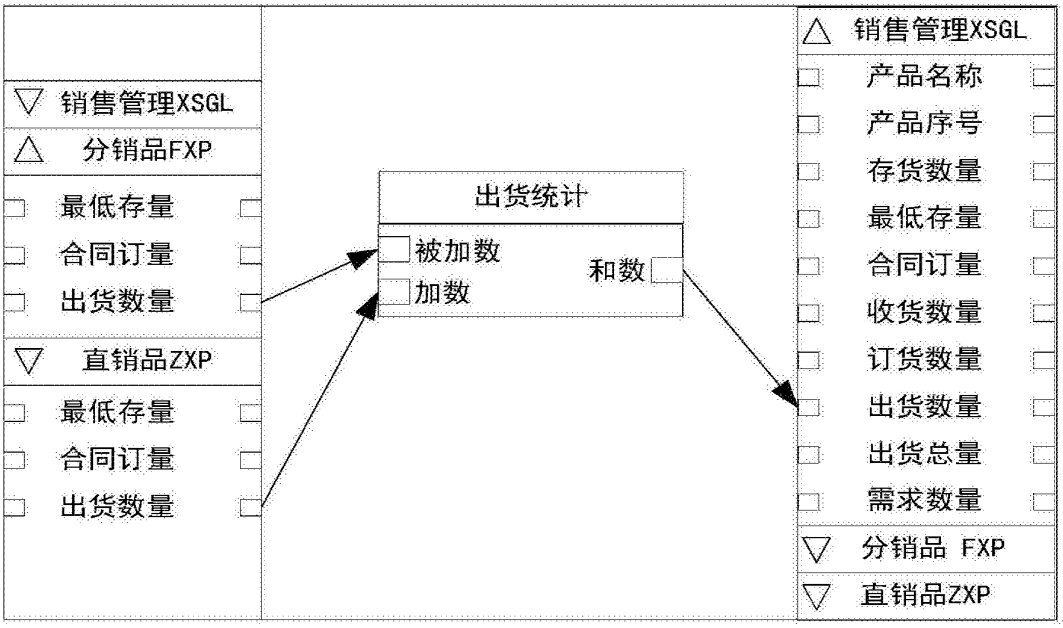


图69

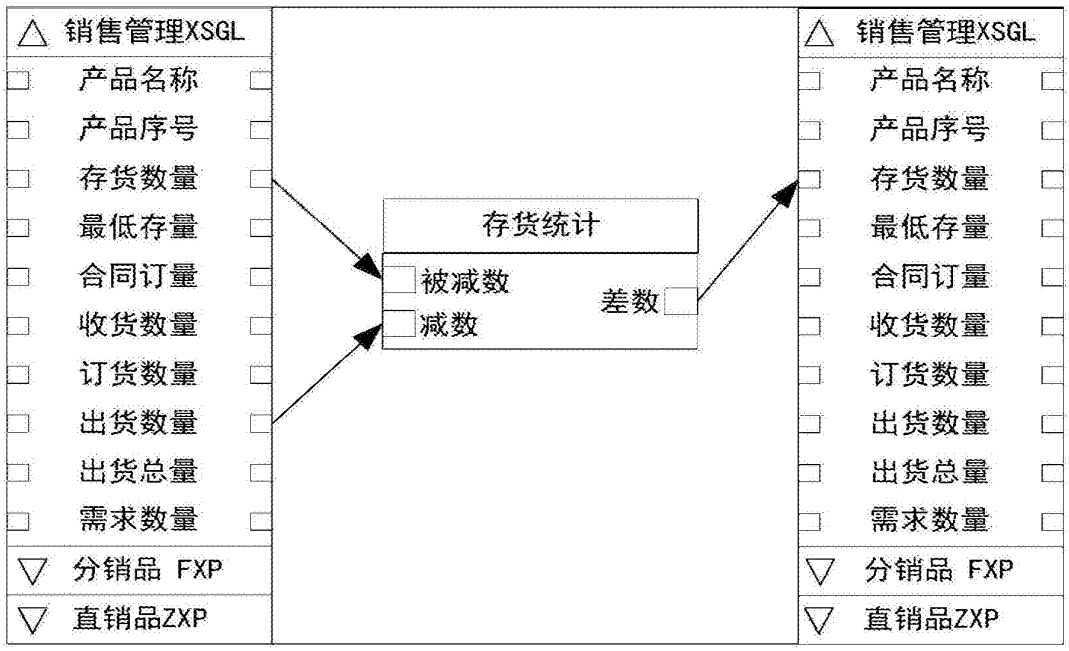


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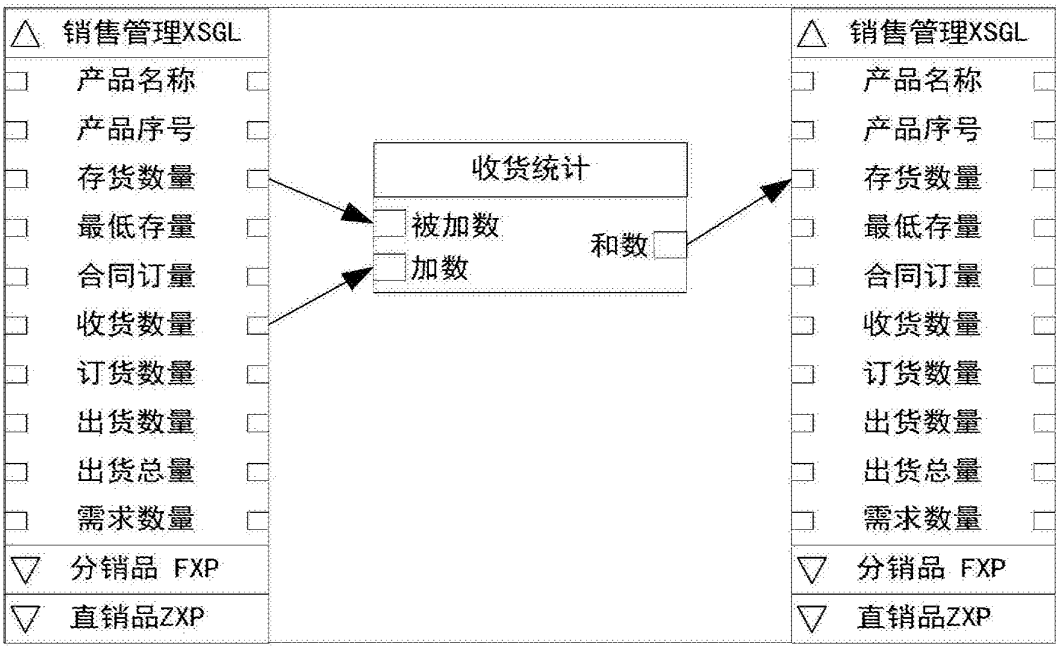


图71

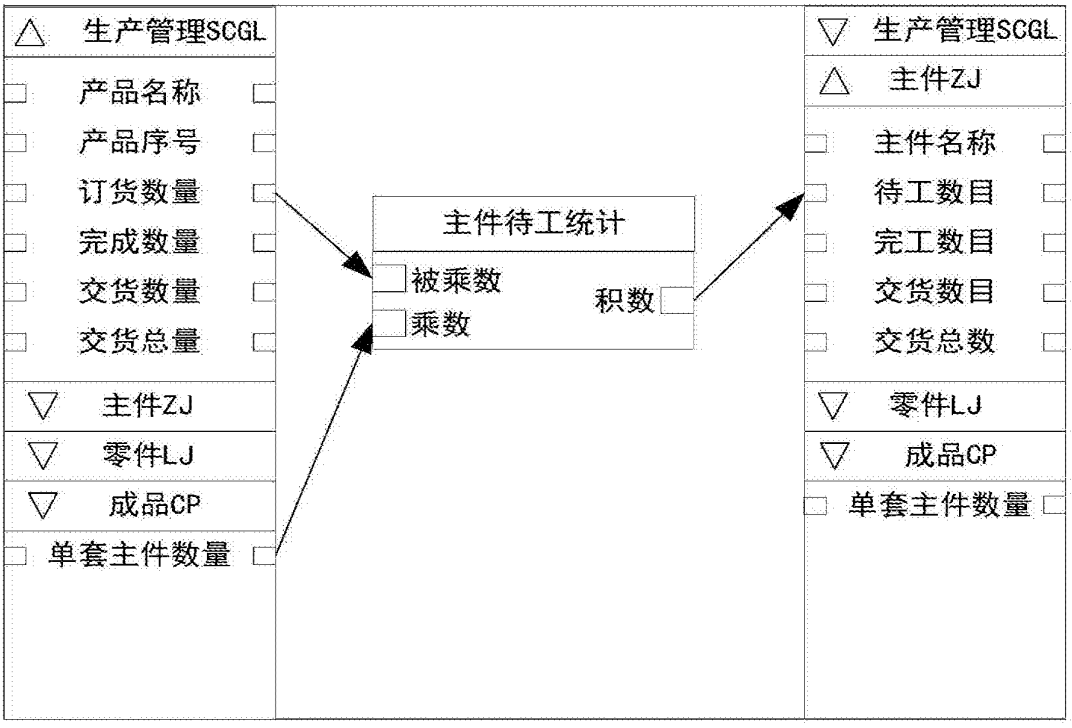


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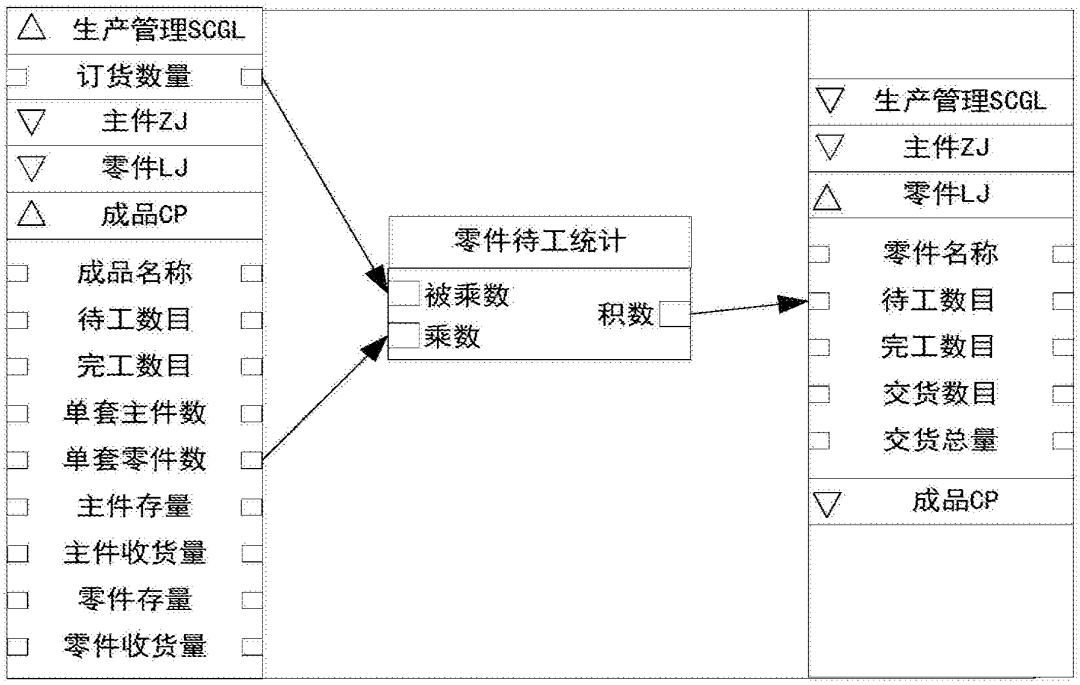


图73

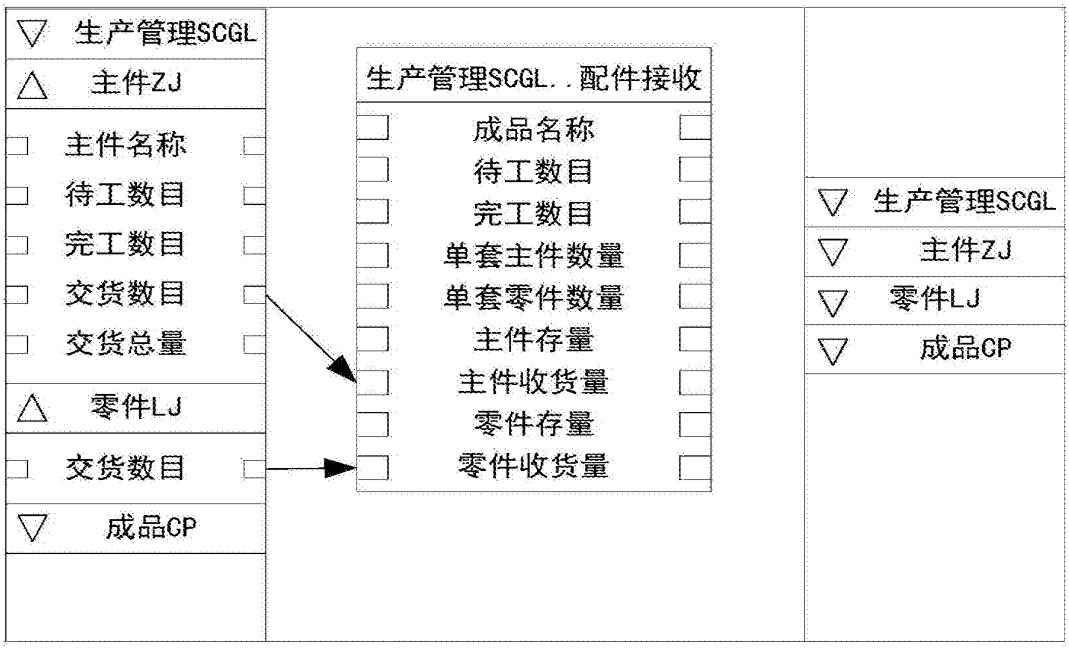


图74

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图75

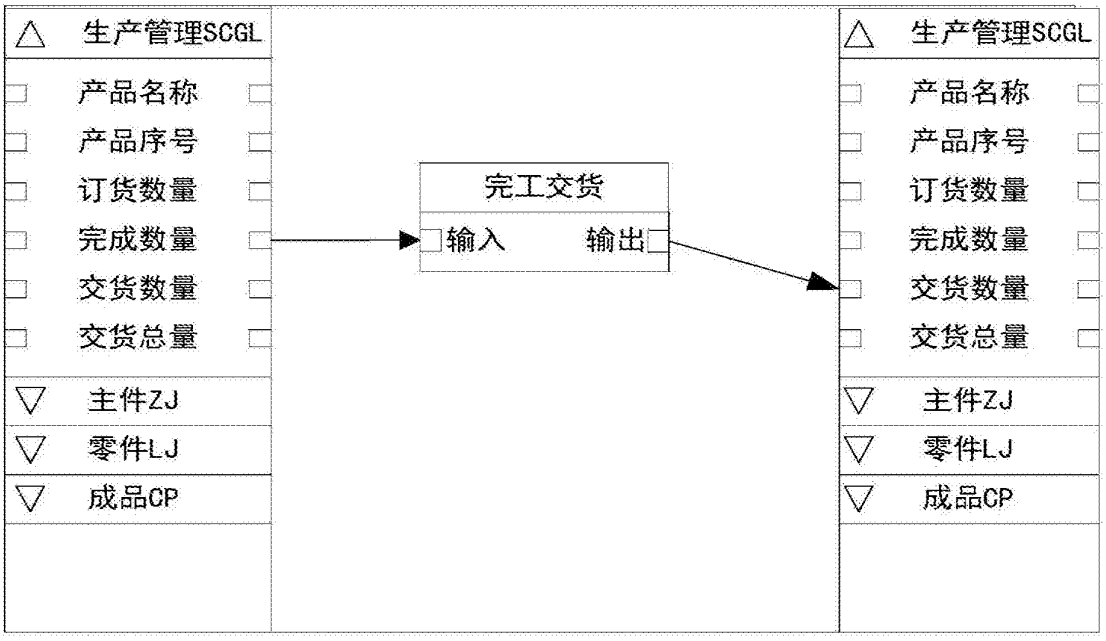


图76

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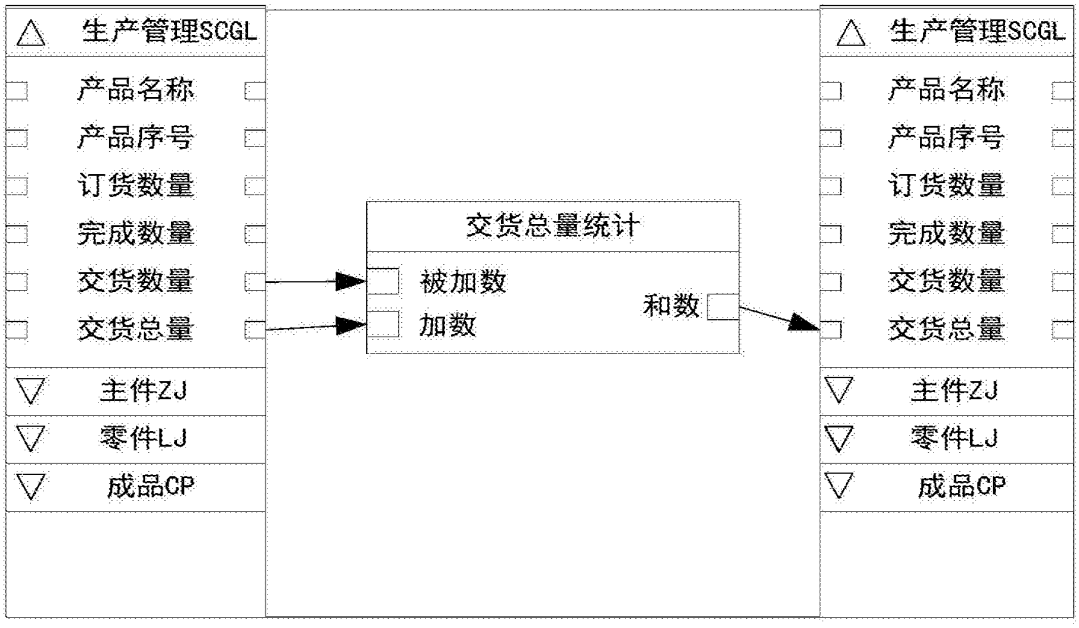


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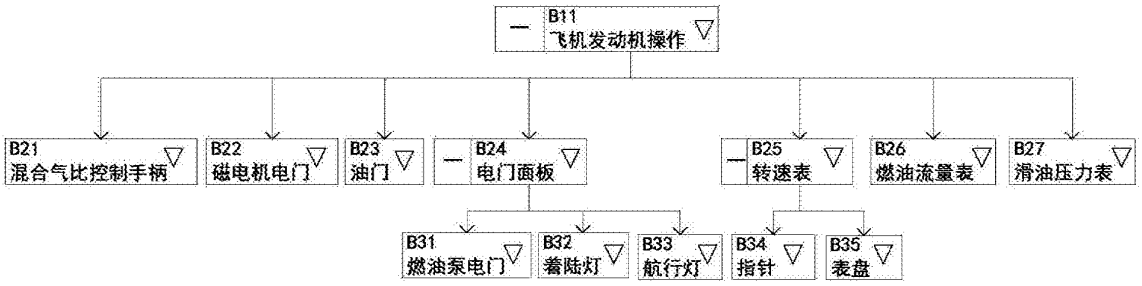


图78

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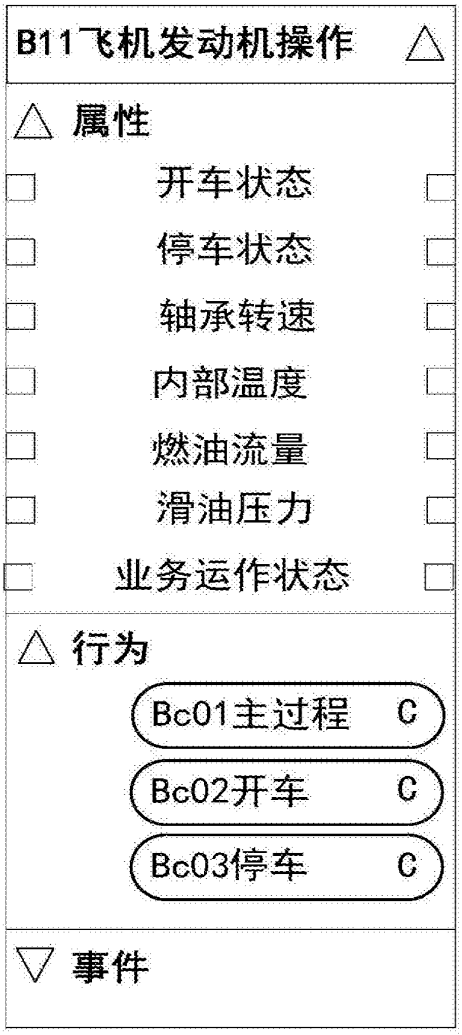

B11飞机发动机操作
△ 属性
开车状态
停车状态
轴承转速
内部温度
燃油流量
滑油压力
业务运作状态
△ 行为
Bc01主过程 C
Bc02开车 C
Bc03停车 C
▽ 事件

图79



图80

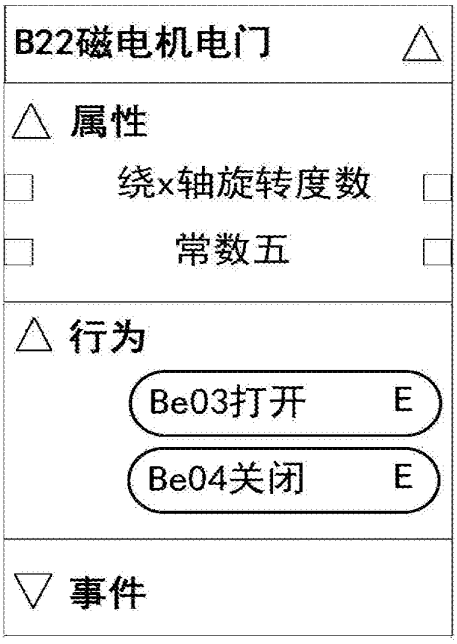


图81

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图82

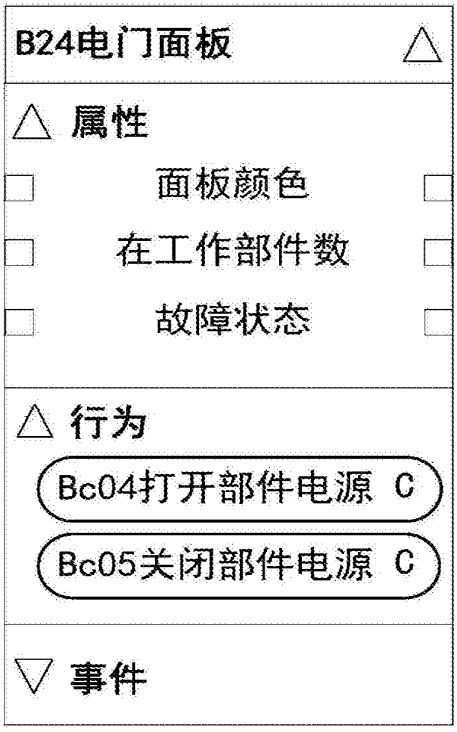


图83

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图84

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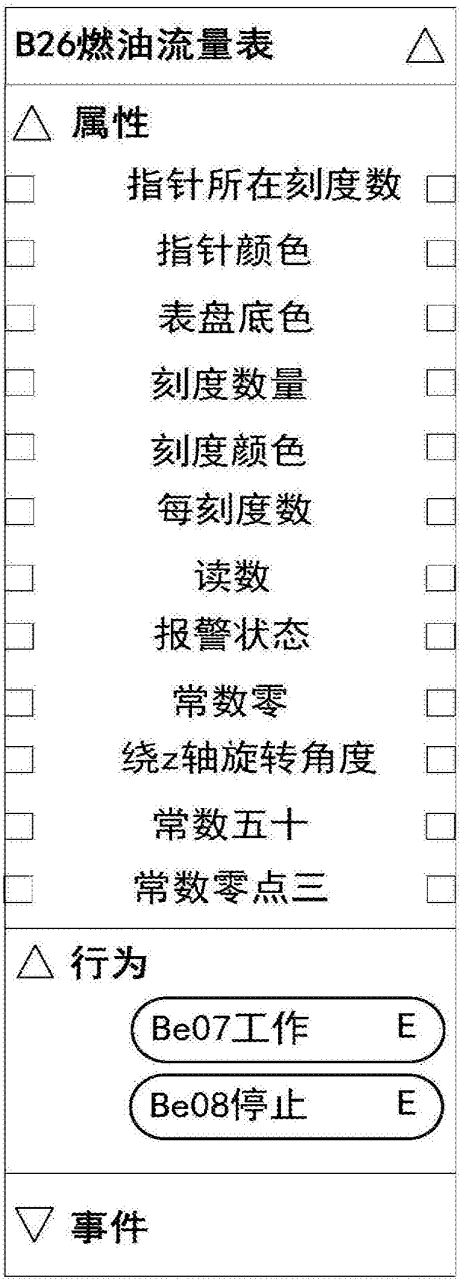


图85

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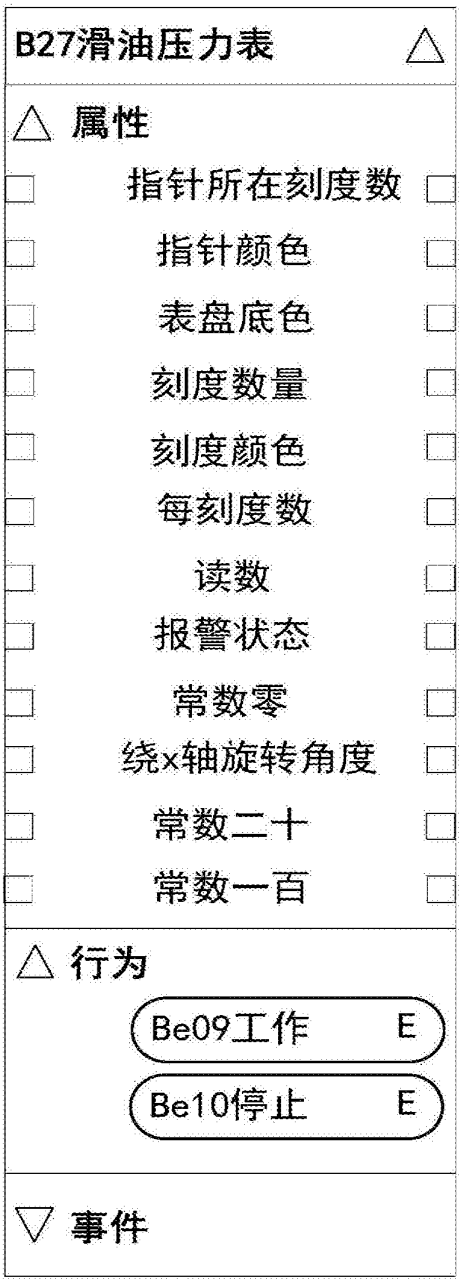


图86

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图87

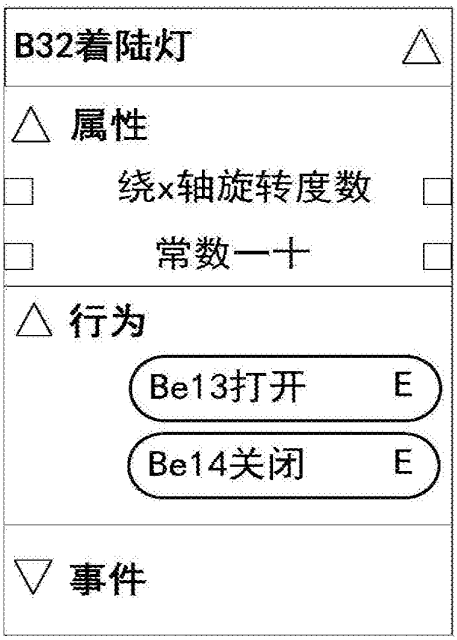


图88

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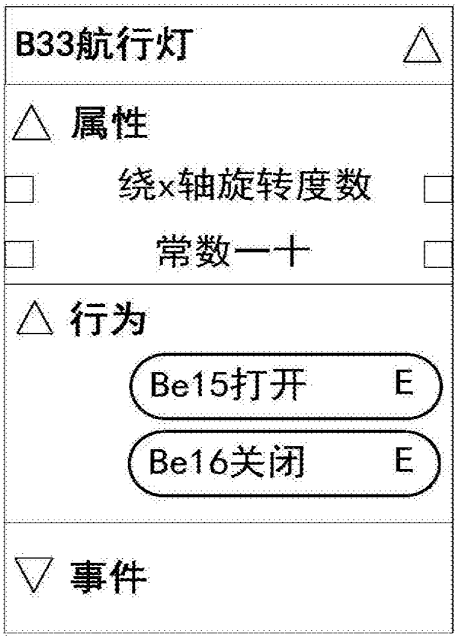


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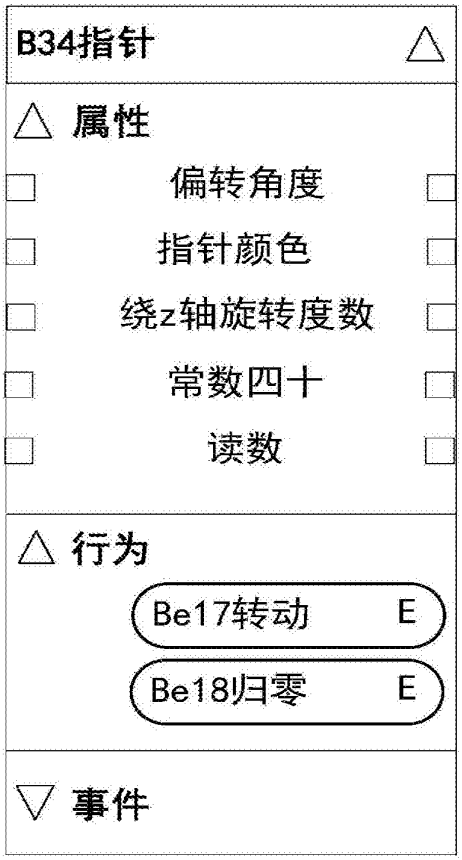


图90

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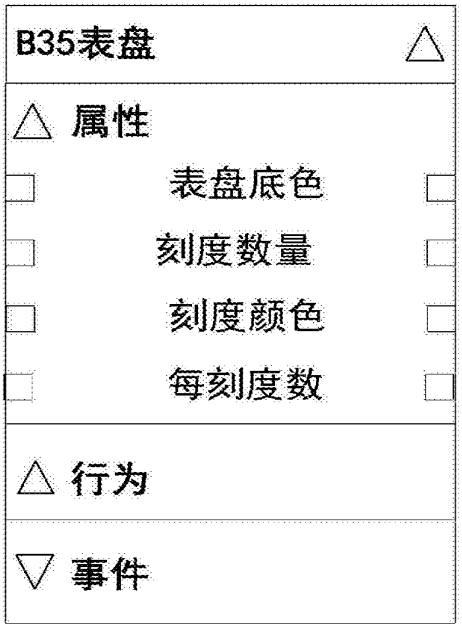


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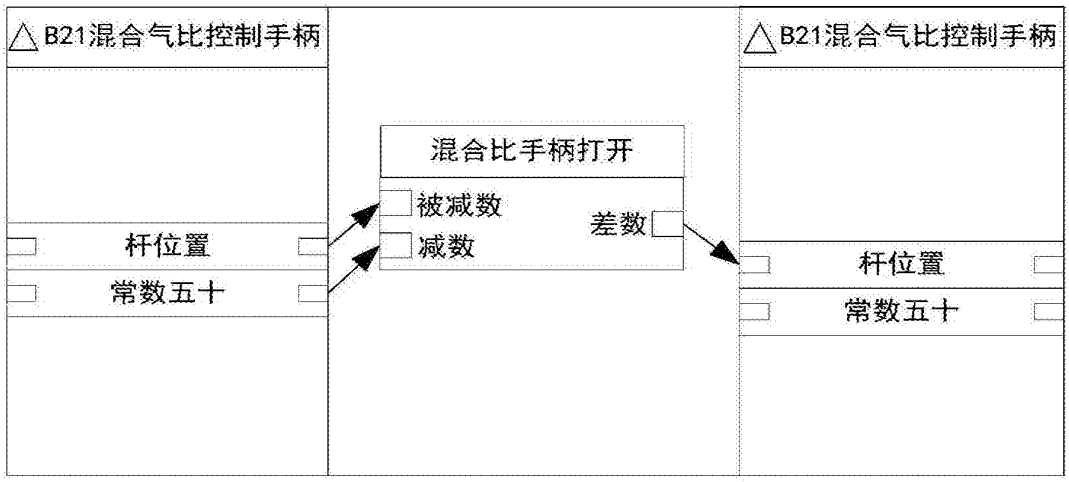


图92

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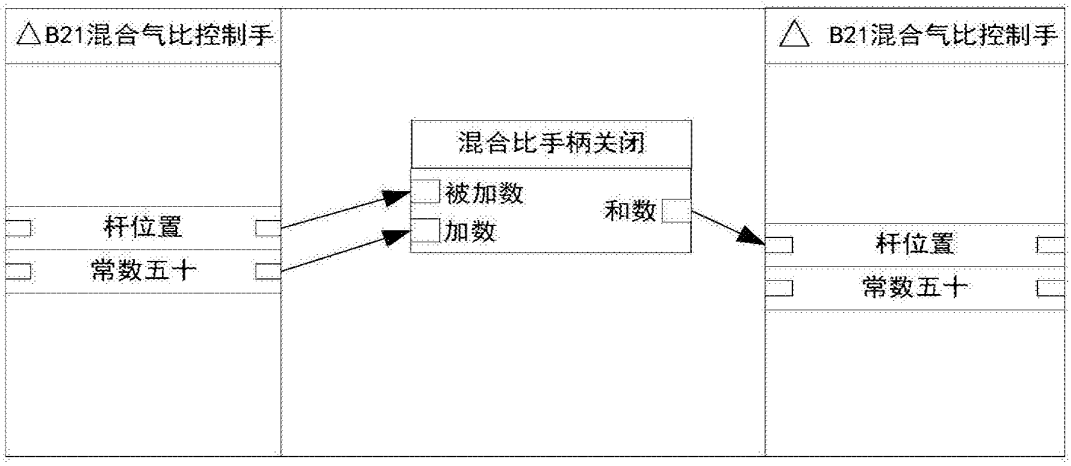


图93

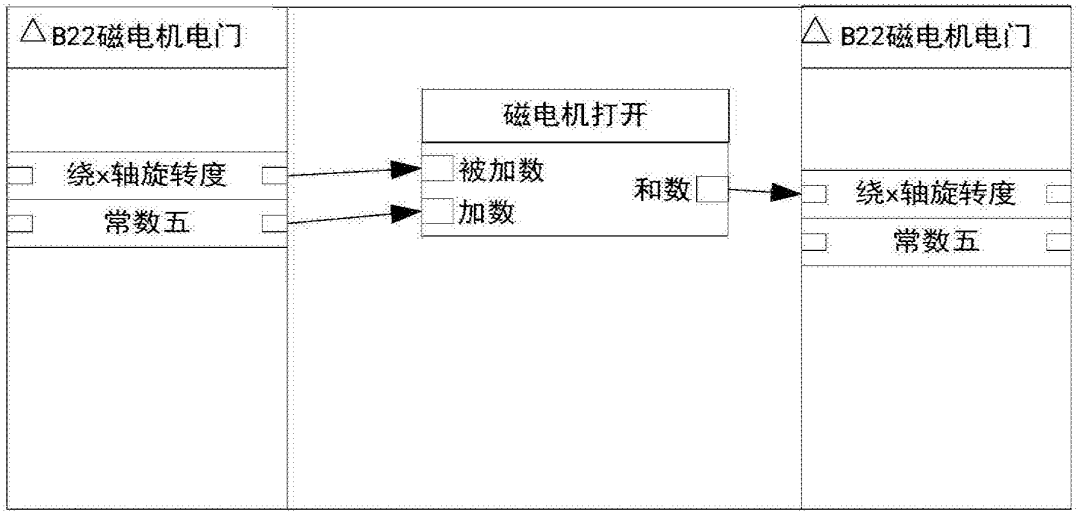


图94

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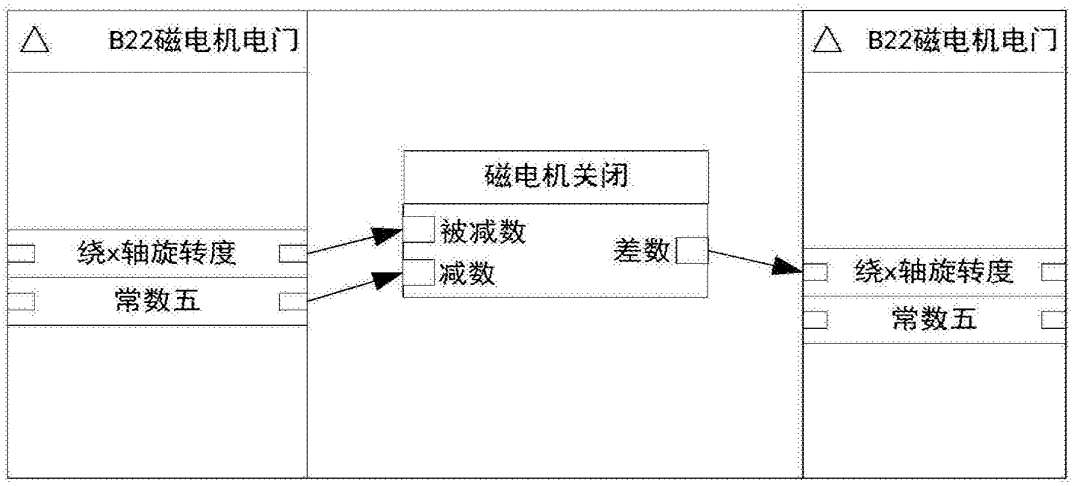


图95

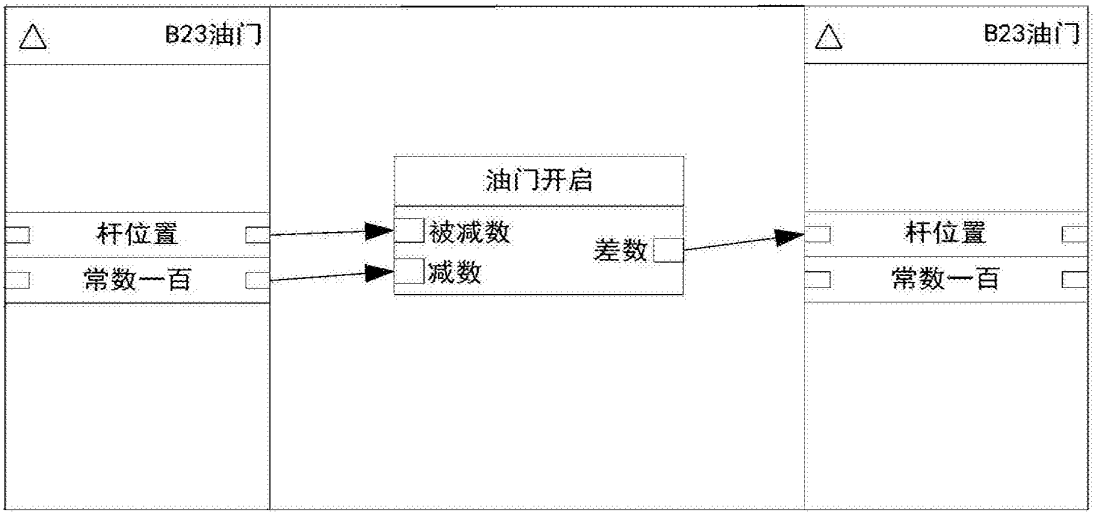


图96

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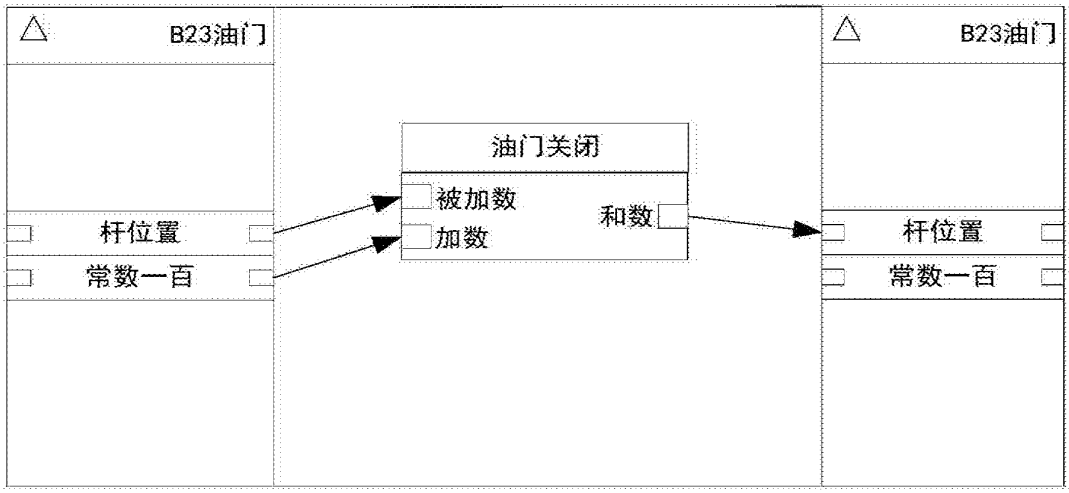


图97

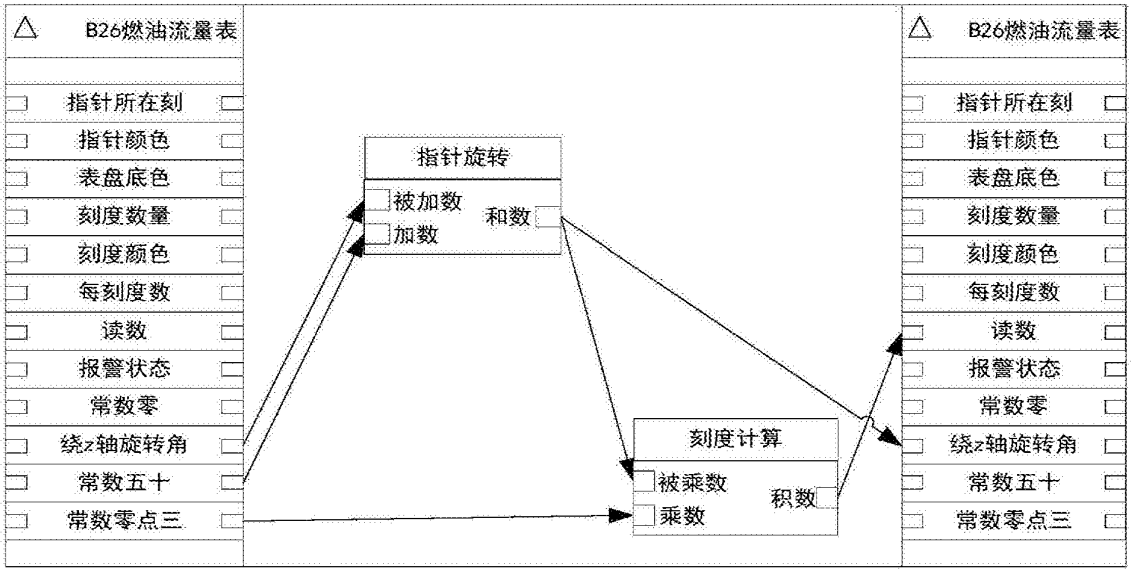


图98

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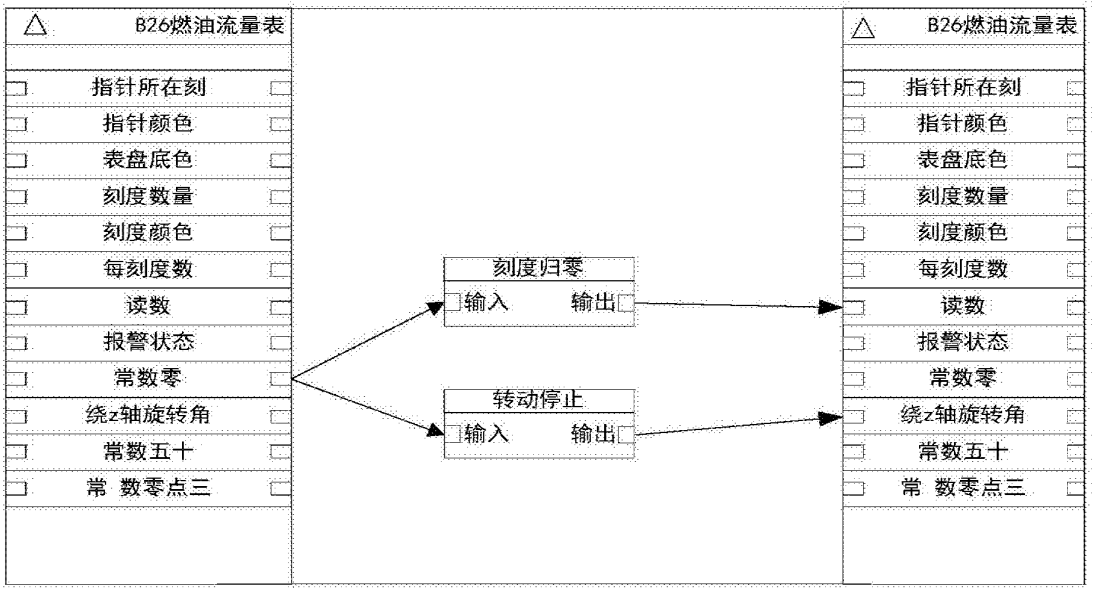


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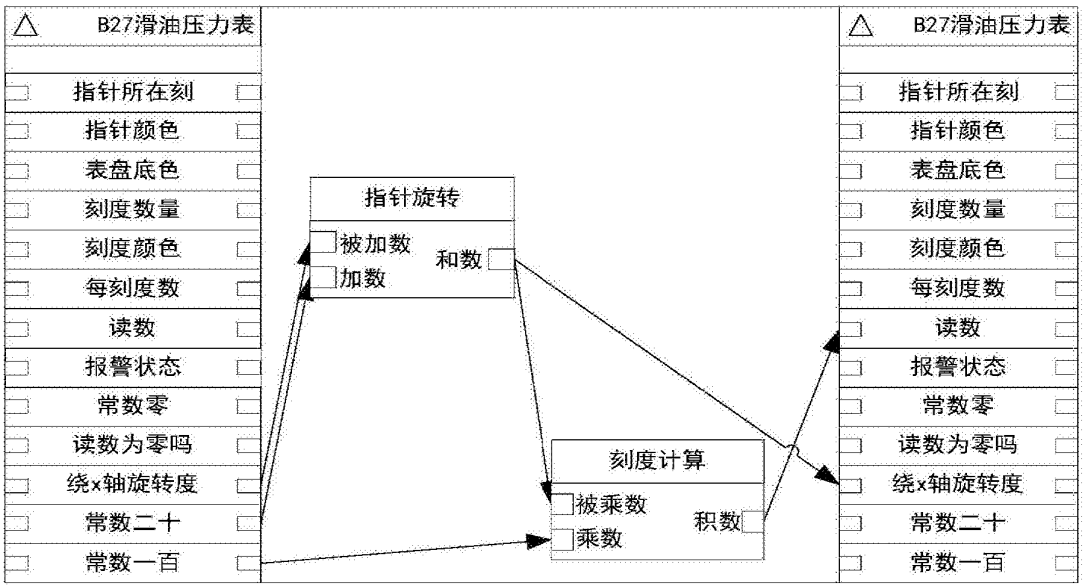


图100

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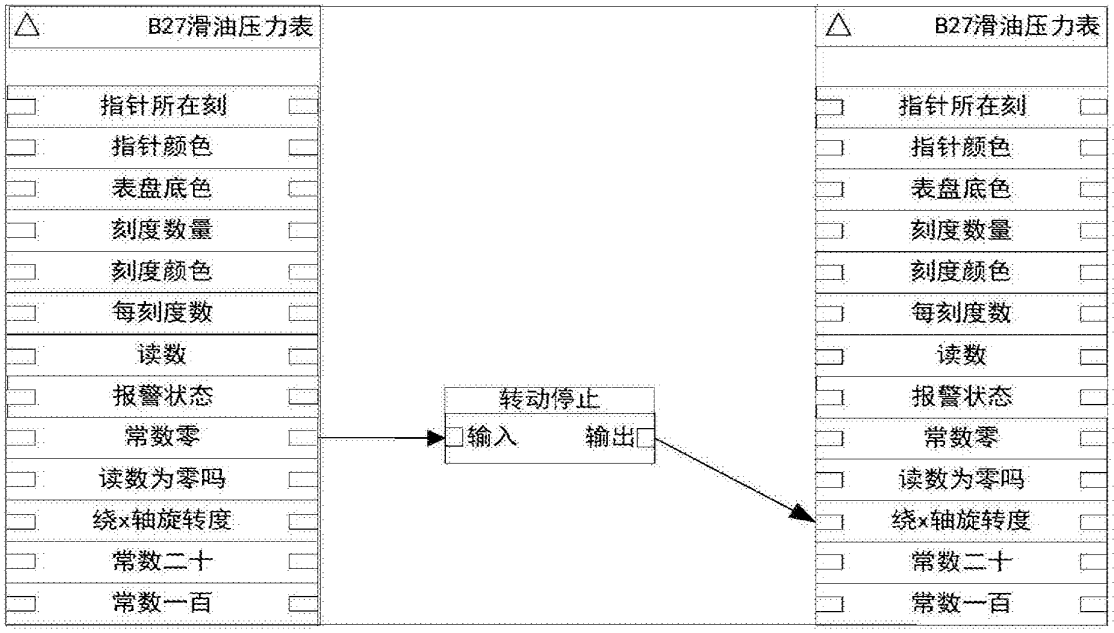


图101

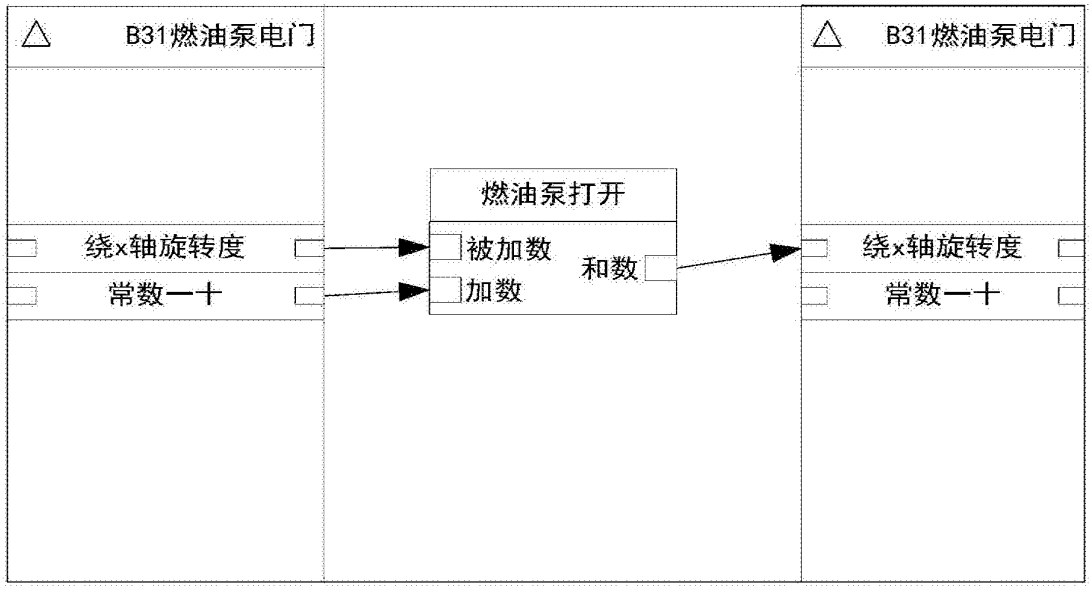


图102

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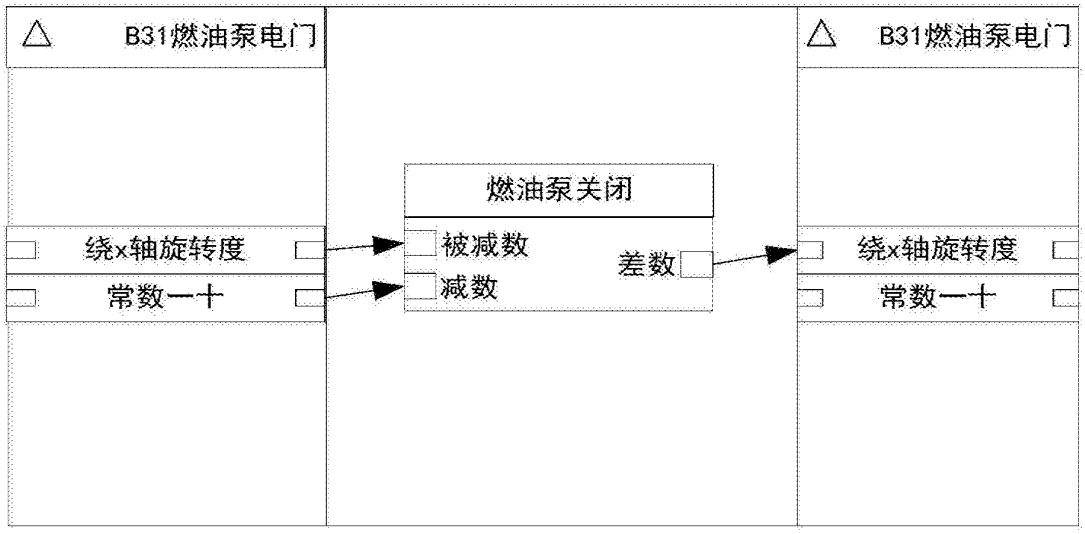


图103

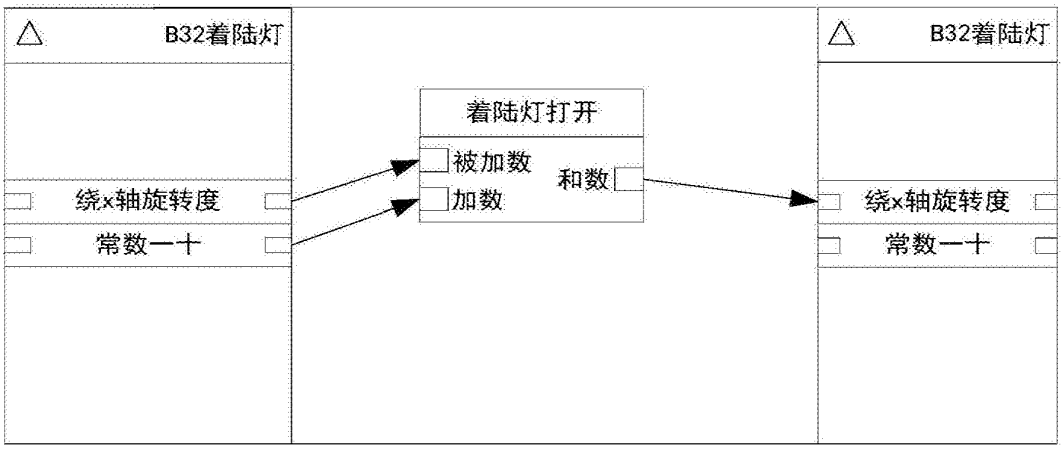


图104

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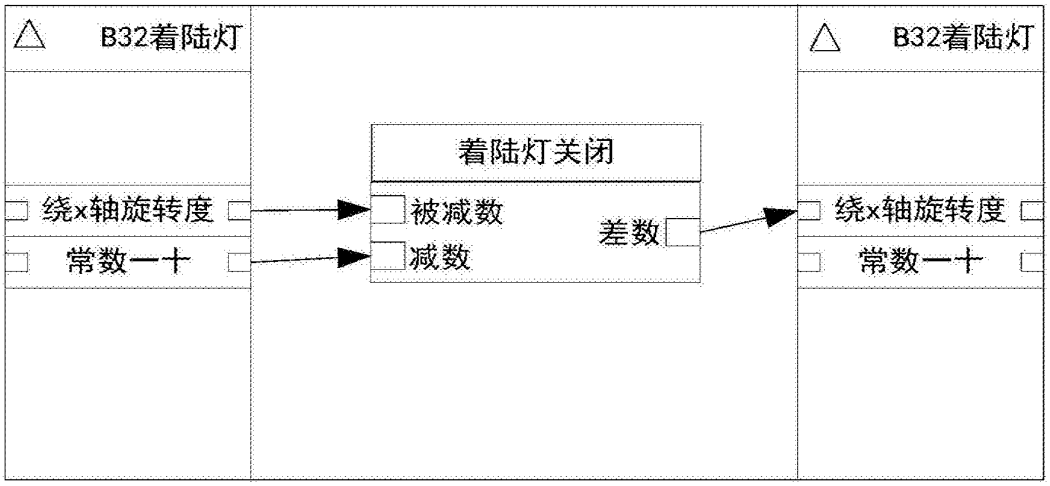


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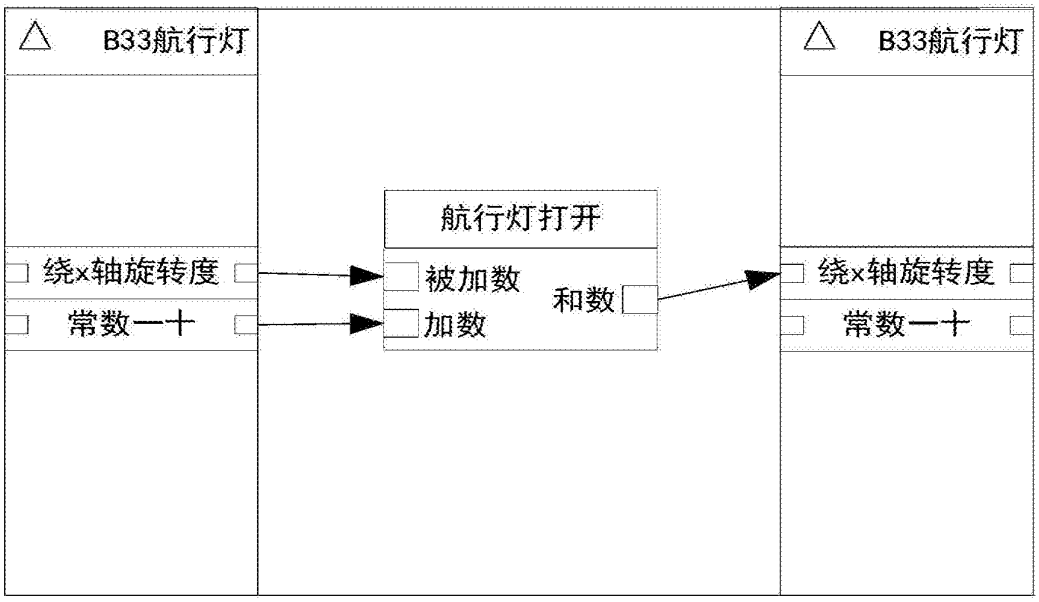


图106

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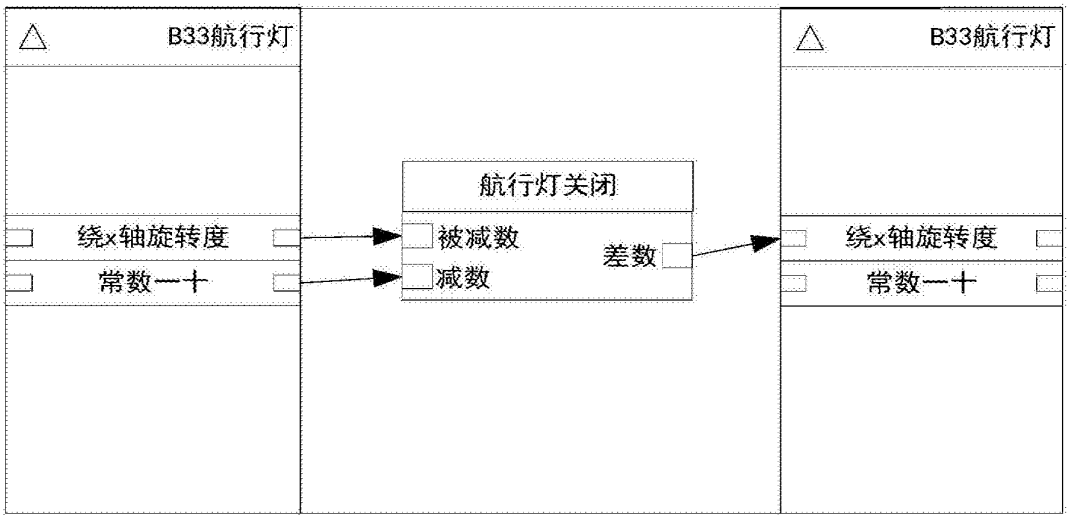


图107

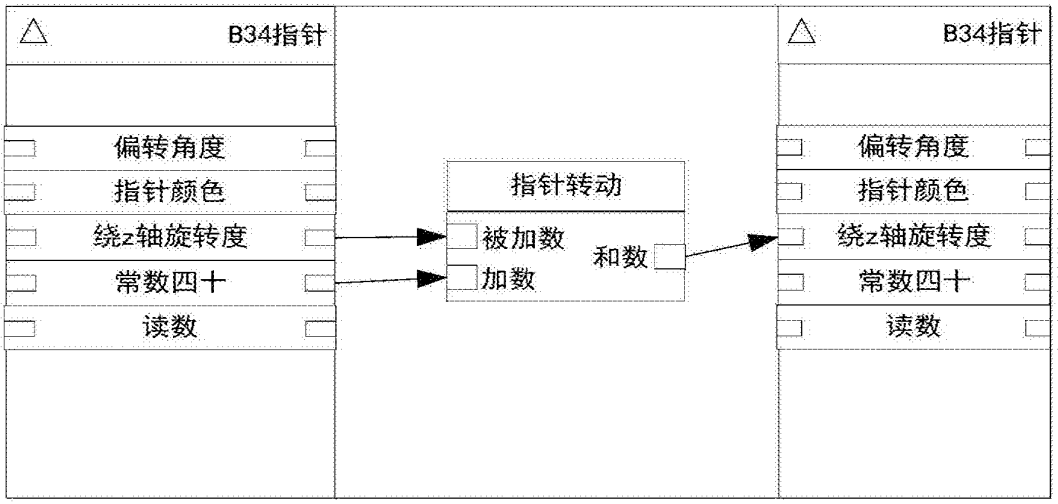


图108

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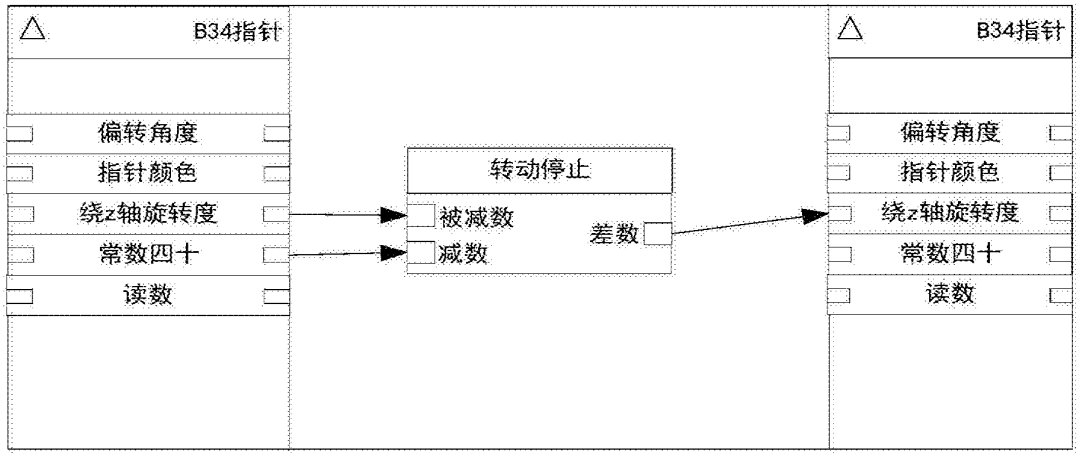


图109

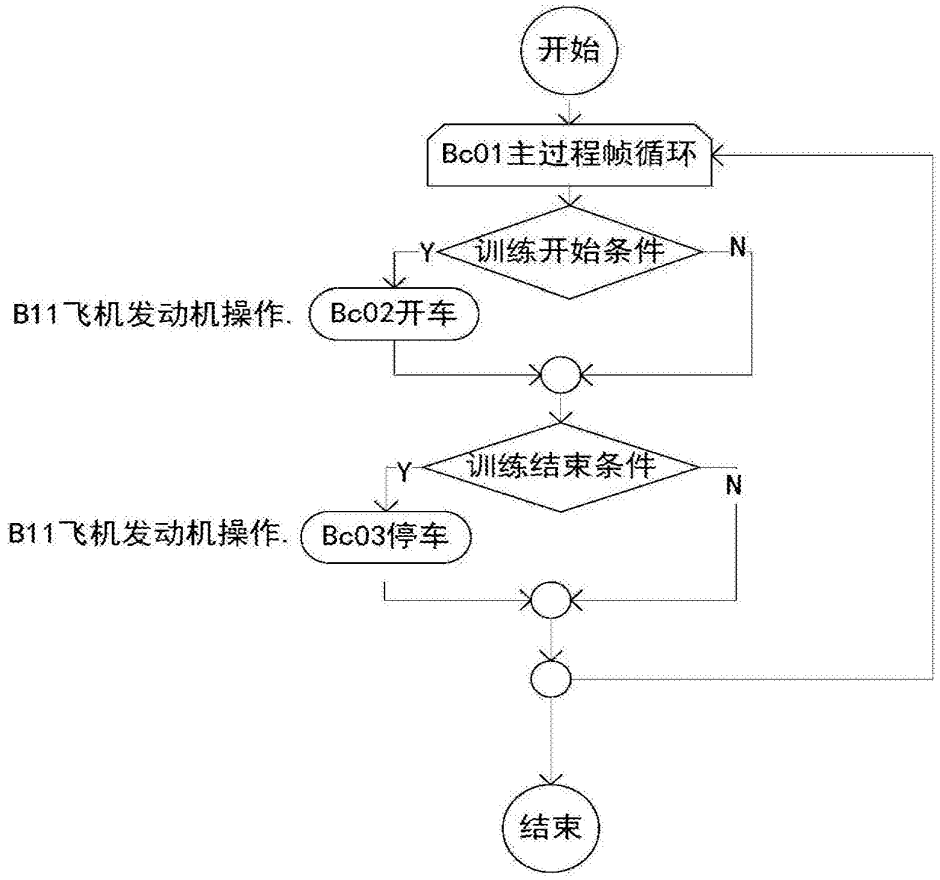


图110

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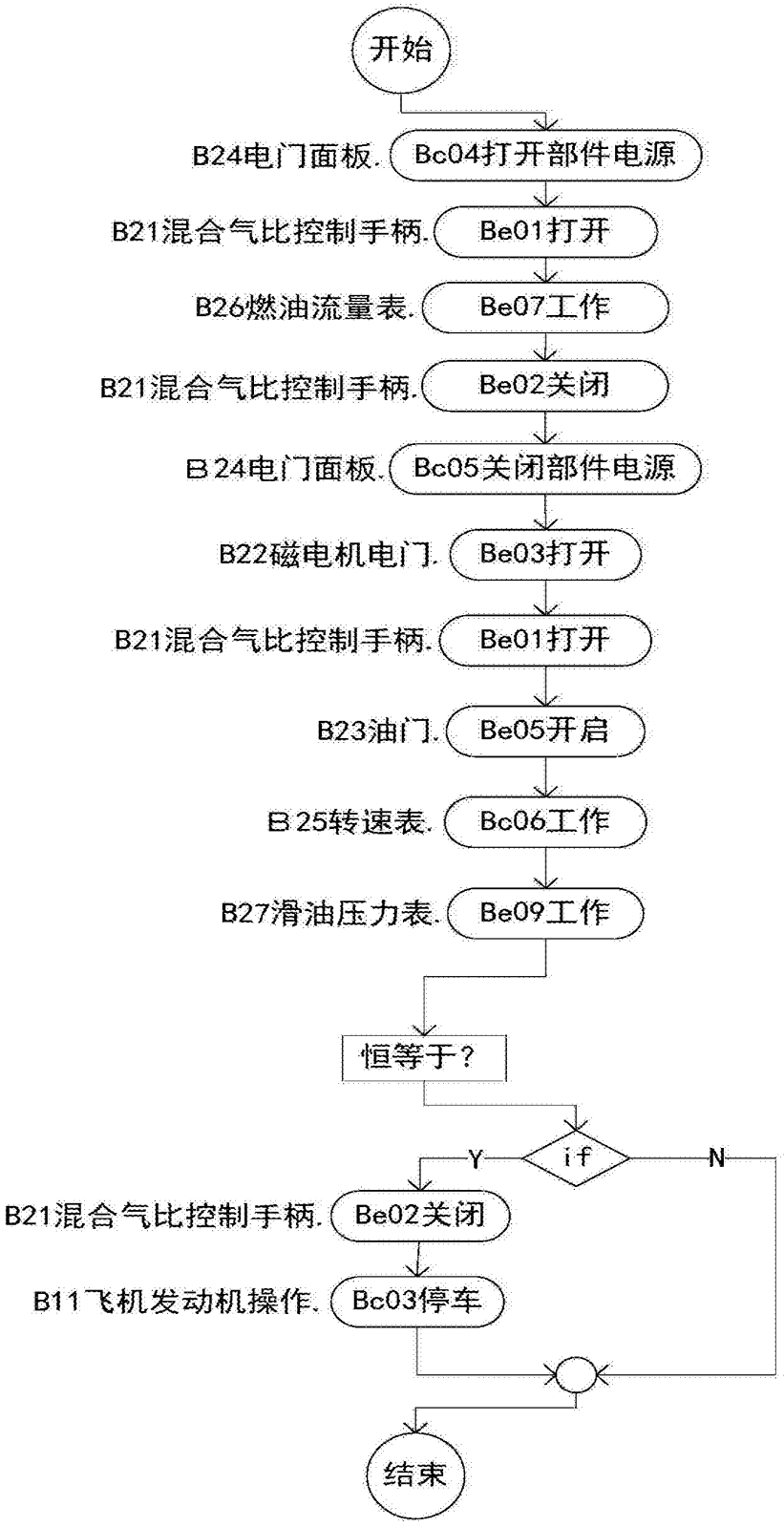


图111

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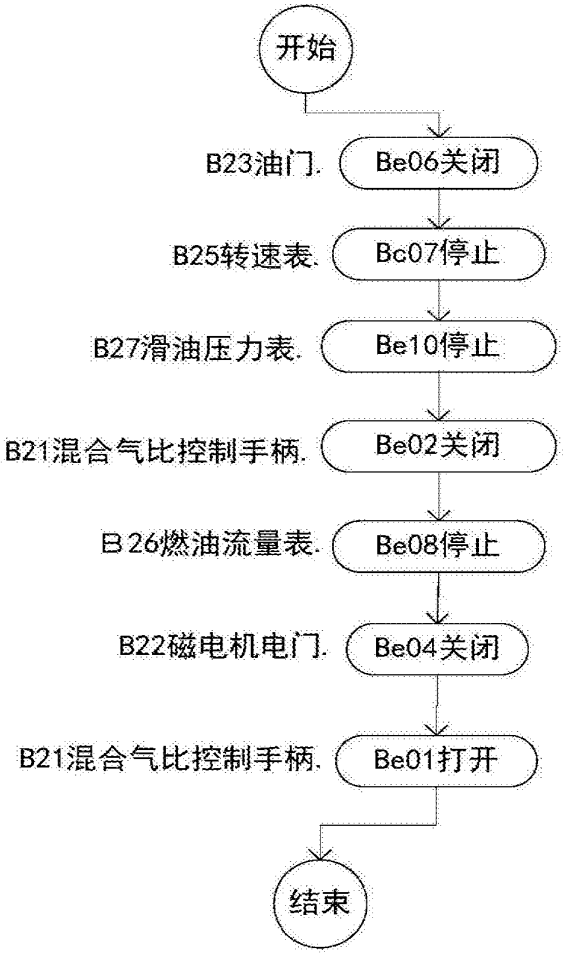


图112

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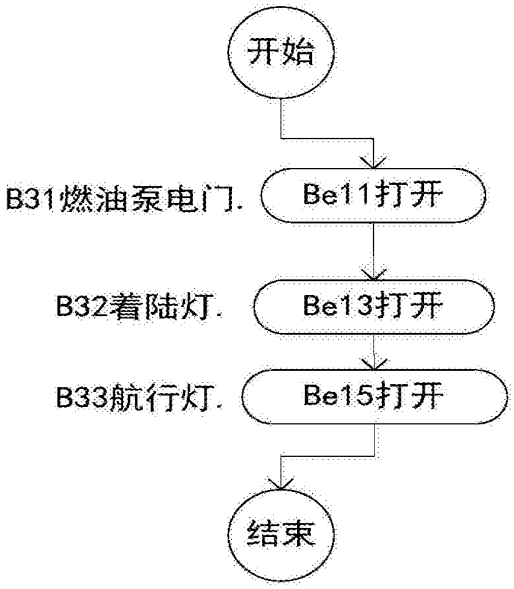


图113

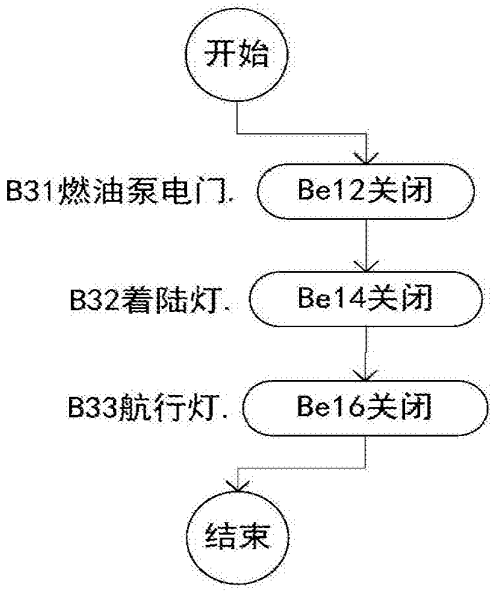


图114

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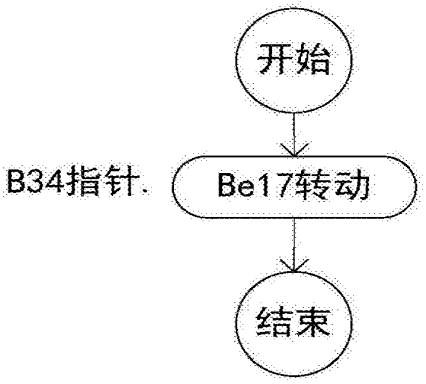


图115

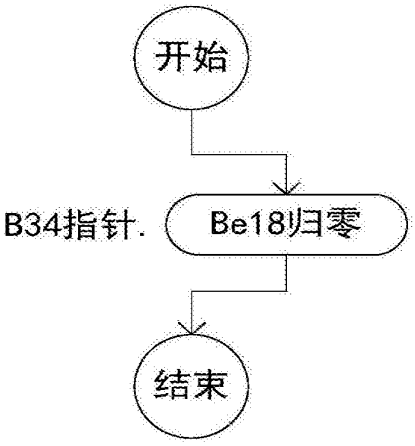


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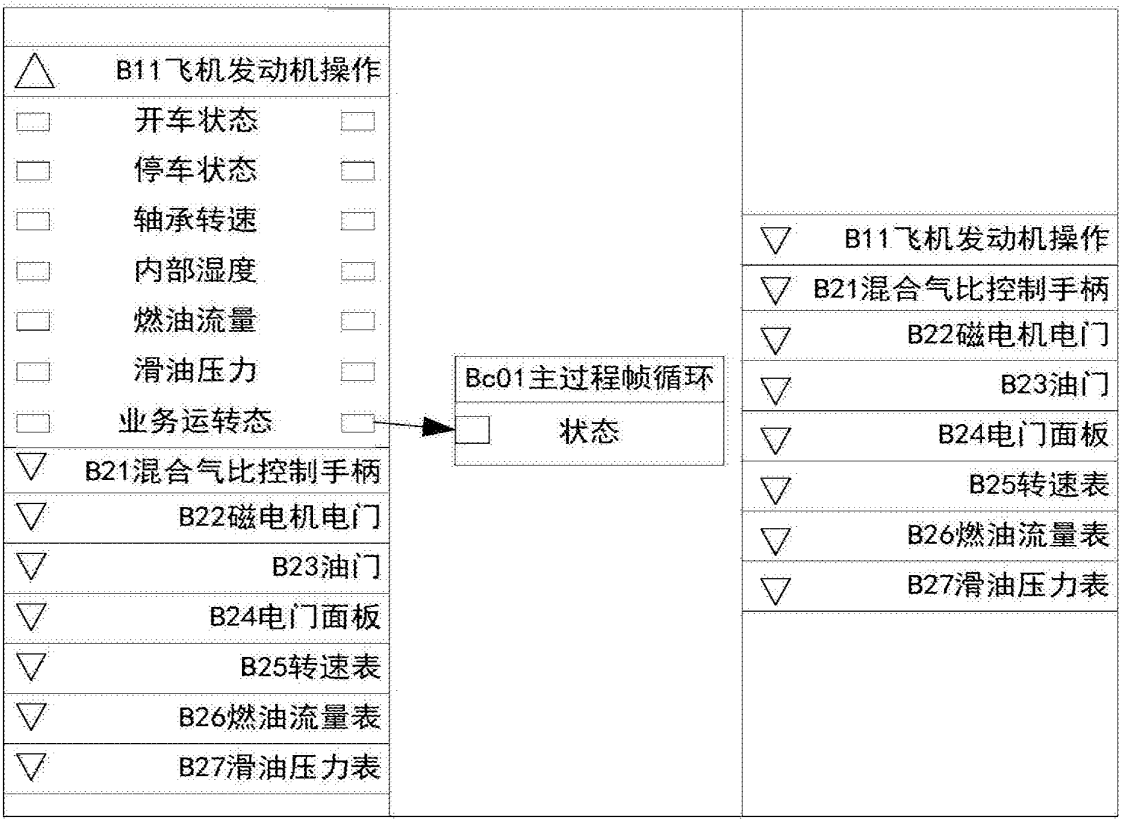


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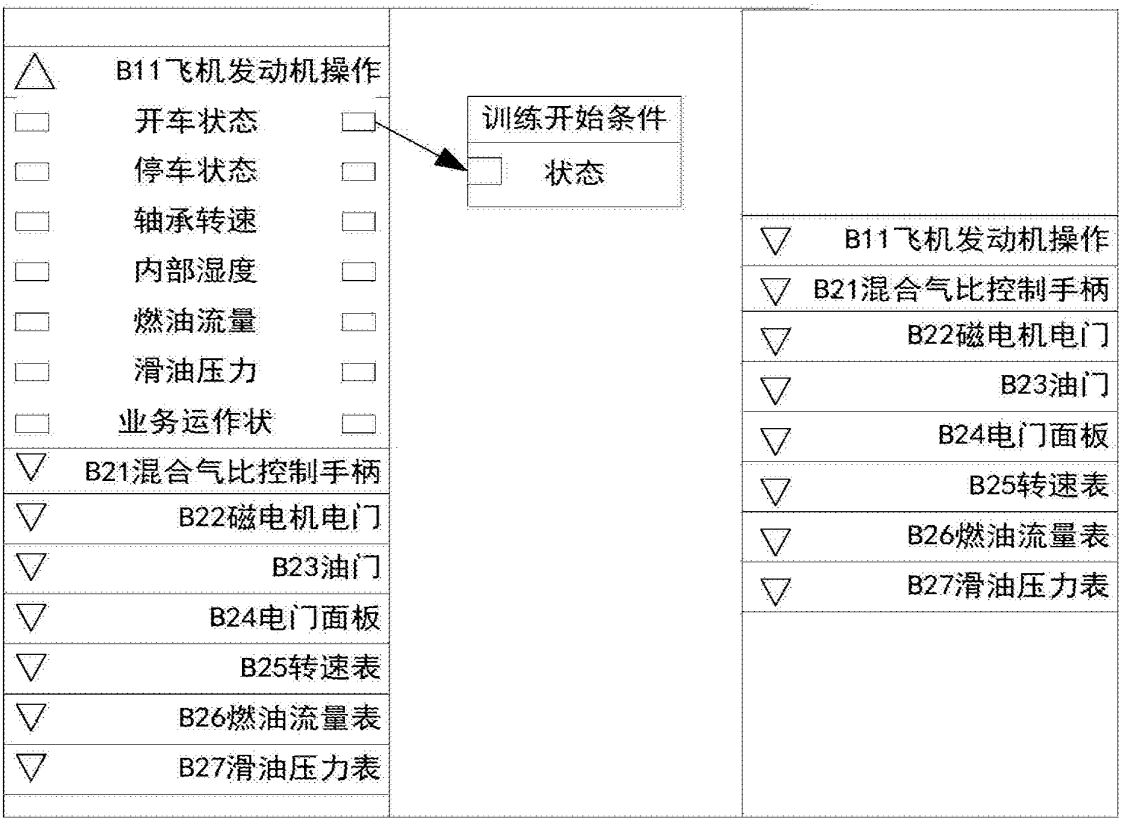


图118

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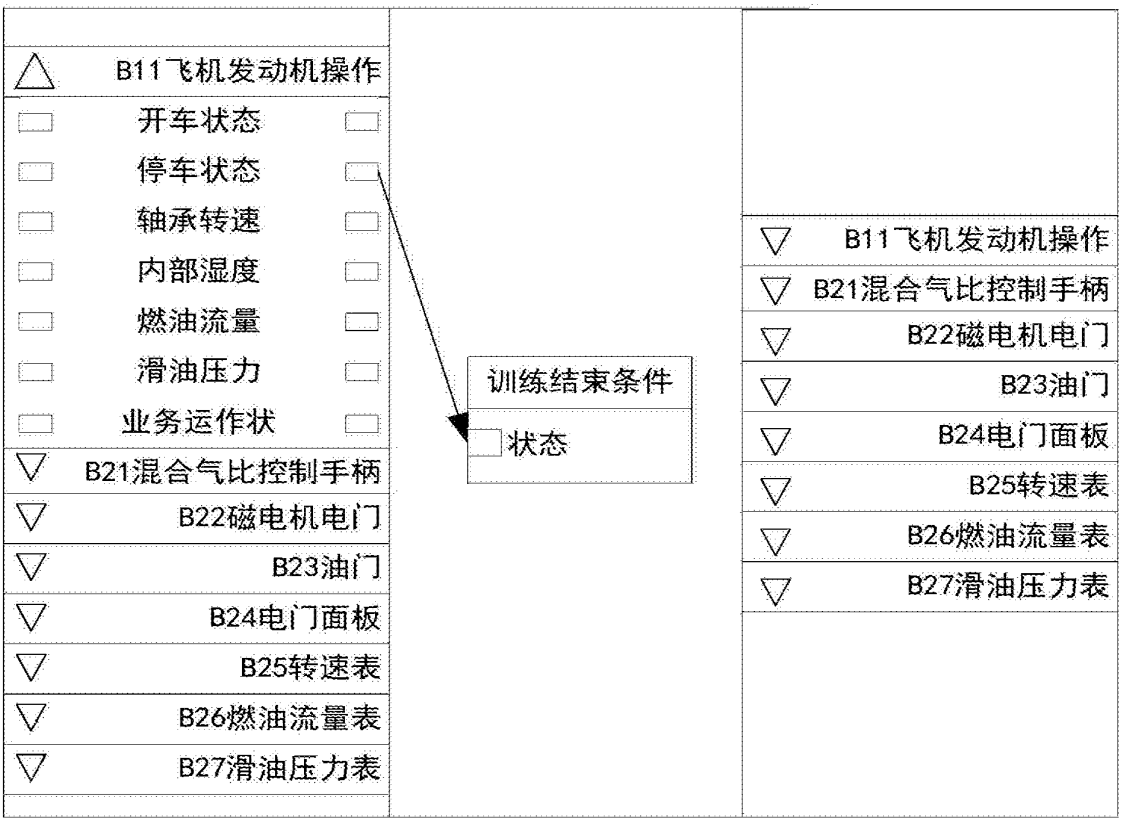


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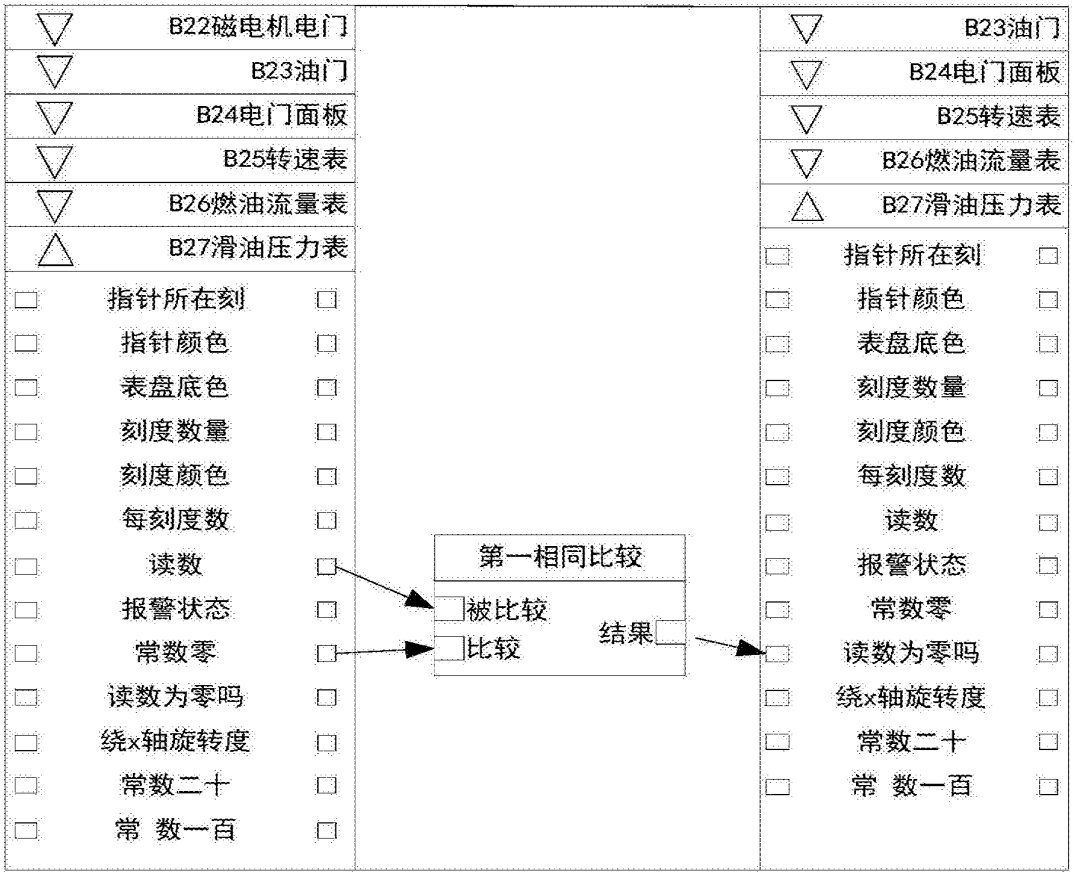


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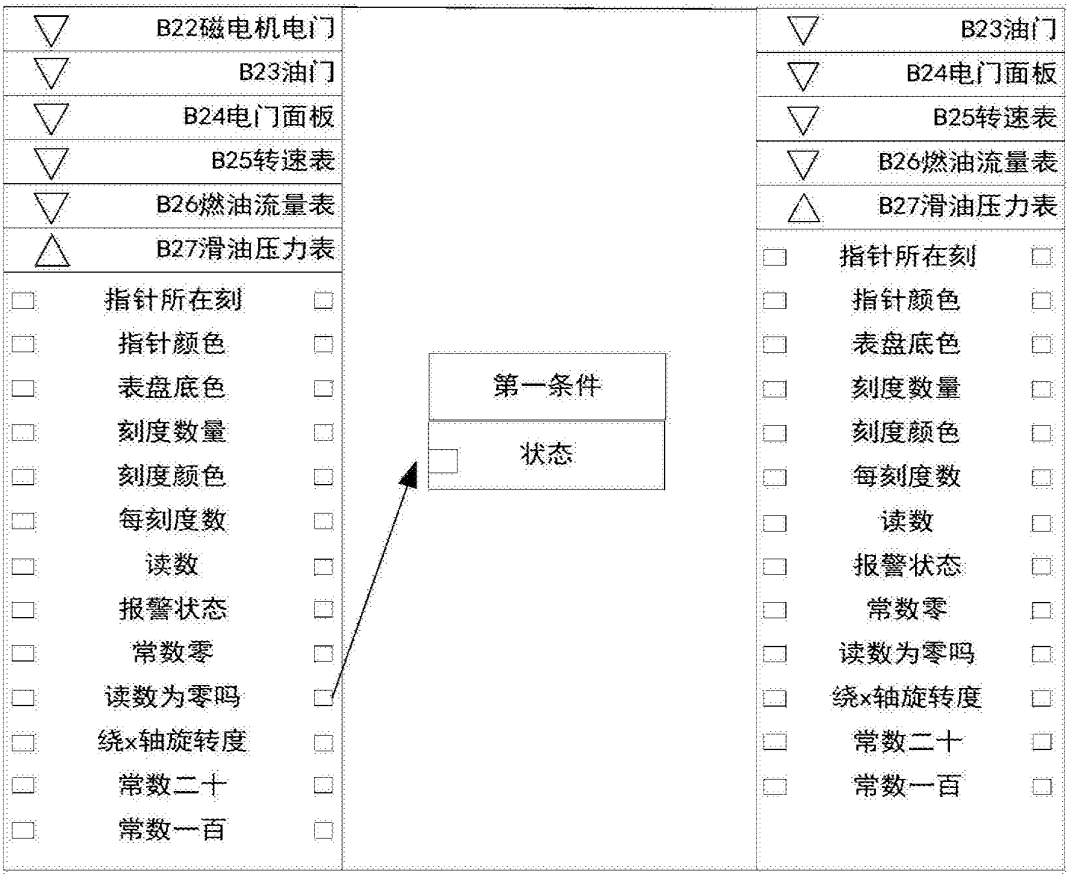


图121

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Espacenet

Bibliographic data: CN105302532 (B) — 2018-06-29

Visual modeling editor for constructing system model

Inventor(s): FU CHANGMING, ; 符长明

Applicant(s): CHENGDU PUZHONG SOFTWARE CO., LTD, ; 成都普中软件有限公司

Classification: **- international:** ***G06F8/33***
- cooperative: **G06F9/44**

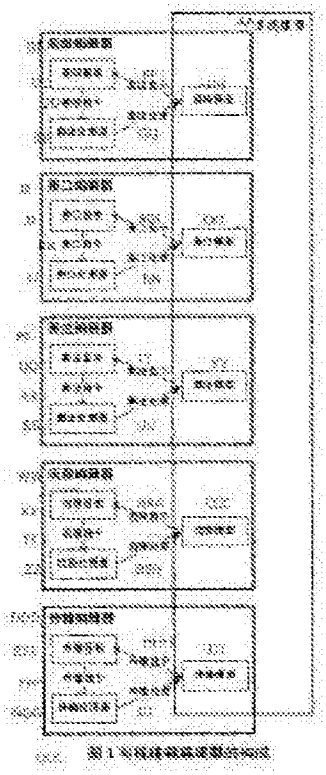
Application number: CN201410293593 20140625 Global Dossier

Priority number(s): CN201410293593 20140625

Also published as: CN105302532 (A) WO2015196782 (A1)

Abstract of CN105302532 (A)

The invention discloses a system meta-model based visual modeling editor for constructing a system model. The editing of the system model and a system view is finished by taking a hierarchical model, an interface model, an algorithm model, a process model, a transmission model and a corresponding view as editing objects through a hierarchical editor, an interface editor, an algorithm editor, a process editor and a transmission editor. A visual system modeling tool with the advantages of computability, universality and usability is provided for various fields. The system model and the system view constructed by the editor are explicit in structure, adjustable in hierarchy and controllable in modeling granularity, and have computable full consistency. Methods are unified, so that top-down analysis design and bottom-up integration are convenient, and the editor is suitable for modeling various systems including software systems and information systems in various application environments. The modeling method is simple and complete in visual modeling, so that even personnel in general fields can independently and easily edit the system model and the system view.



PTO/SB/08a (03-15)
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(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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	2	20140279762	A1	2014-09-18	XAYPANYA, Tommy et al.	
	3	20170193110	A1	2017-07-06	CRABTREE, Jason et al.	
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	First Named Inventor	Mike Chasman
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	Attorney Docket Number	15026

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	Application Number	16412340
	Filing Date	2019-05-14
	First Named Inventor	Mike Chasman
	Art Unit	2447
	Examiner Name	-
	Attorney Docket Number	15026

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	/Brian S. Boon/	Date (YYYY-MM-DD)	2019-07-23
Name/Print	Brian S. Boon	Registration Number	77640

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.

Electronic Acknowledgement Receipt

EFS ID:	36677334
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Alexandria Wright
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	24-JUL-2019
Filing Date:	14-MAY-2019
Time Stamp:	14:29:29
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	Information Disclosure Statement (IDS) Form (SB08)	190724_15026_IDS_AS_FILED.pdf	1039195 f12ab5db4ecc60127ee8b17c7773e0ee5b979185	no	4

Warnings:

Information:	
Total Files Size (in bytes):	1039195

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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
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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	20090222562	A1	2009-09-03	LIU, Jie et al.	
	2	20140156806	A1	2014-06-05	KARPISTSENKO, Andre et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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

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EXAMINER SIGNATURE

Examiner Signature		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	16412340
	Filing Date	2019-05-14
	First Named Inventor	Mike Chasman
	Art Unit	2447
	Examiner Name	-
	Attorney Docket Number	15026

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Signature	/Brian S. Boon/	Date (YYYY-MM-DD)	2019-07-30
Name/Print	Brian S.Boon	Registration Number	77640

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Electronic Acknowledgement Receipt

EFS ID:	36757742
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Alexandria Wright
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	01-AUG-2019
Filing Date:	14-MAY-2019
Time Stamp:	15:33:28
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	Information Disclosure Statement (IDS) Form (SB08)	190801_15026_IDS_AS_FILED.pdf	1035047 8df9ab5fa6c28c172a2e4ba85ff49f5e3ba7dd85	no	4

Warnings:

Information:	
Total Files Size (in bytes):	1035047

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

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

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New International Application Filed with the USPTO as a Receiving Office

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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
16/412,340	05/14/2019	2447	0.00	15026	10	6

CONFIRMATION NO. 7063

FILING RECEIPT

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
SILVERDALE, WA 98383

OC000000108597205

Date Mailed: 06/03/2019

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)

Mike Chasman, Reston, VA;
Jeffrey Chung, Reston, VA;
Jason Crabtree, Vienna, VA;
Luka Jurukovski, Reston, VA;
Rich Kelley, Reston, VA;
Andre Ludwig, Reston, VA;
Artem Panasenkov, Reston, VA;
Andrew Sellers, Monument, CO;

Applicant(s)

Fractal Industries, Inc., Reston, VA;

Power of Attorney: The patent practitioners associated with Customer Number 82318

Domestic Priority data as claimed by applicant

This application is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/813,097 11/14/2017
which is a CIP of 15/616,427 06/07/2017
which is a CIP of 14/925,974 10/28/2015
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017

which is a CIP of 15/376,657 12/13/2016
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
which is a CIP of 15/206,195 07/08/2016
which is a CIP of 15/186,453 06/18/2016
which is a CIP of 15/166,158 05/26/2016
which is a CIP of 15/141,752 04/28/2016
which is a CIP of 15/091,563 04/05/2016 PAT 10204147
which is a CIP of 14/986,536 12/31/2015 PAT 10210255
which is a CIP of 14/925,974 10/28/2015
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017
which is a CIP of 15/343,209 11/04/2016
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
and is a CIP of 15/229,476 08/05/2016
which is a CIP of 15/206,195 07/08/2016
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/673,368 08/09/2017
which is a CIP of 15/376,657 12/13/2016
This application 16/412,340
is a CIP of 16/248,893 01/16/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,312 12/07/2017
which is a CIP of 15/186,453 06/18/2016
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
and said 16/248,893 01/16/2019
is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,436 12/07/2017
which is a CIP of 15/790,457 10/23/2017
which claims benefit of 62/568,298 10/04/2017
and is a CIP of 15/790,327 10/23/2017
which claims benefit of 62/568,291 10/04/2017
and is a CIP of 15/616,427 06/07/2017
and is a CIP of 15/141,752 04/28/2016

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.

If Required, Foreign Filing License Granted: 05/31/2019
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/412,340**
Projected Publication Date: To Be Determined - pending completion of Missing Parts
Non-Publication Request: No
Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

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

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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.

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

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

GALVIN PATENT LAW LLC

2916 NW Bucklin Hill Road, Suite 485
Silverdale, WA 98383
(360) 674-6233 (Office)

August 22, 2019

Commissioner for Patents
United States Patent & Trademark Office
PO Box 1450
Alexandria, VA 22313-1450

Application Serial No. 16/412,340; Correction of Filing Receipt

Dear Commissioner:

Please find enclosed the originally filed Application Data Sheet (ADS) together with the filing receipt mailed on June 3, 2019. Applicant notes that the Filing Receipt needs correction as it erroneously indicates that application 16/412,340 is a CIP of 16/248,893. Page 5, 7 and 8 of the ADS filed on May 14, 2019 states that the above-referenced application is in fact a CIP of 16/267,893.

Applicant hereby request that the USPTO correct the filing receipt that was mailed on June 3, 2019 to reflect the correct continuity information.

Thank you,

/BRIAN R. GALVIN/

Brian Galvin
Patent Agent
Reg. #50,966

Enclosures

Electronic Acknowledgement Receipt

EFS ID:	36969626
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Erin Dobbs
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	23-AUG-2019
Filing Date:	14-MAY-2019
Time Stamp:	22:16:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	190823_15026_ADS_AS_FILED.pdf	500772 9bf91fe0989133b95951e60a37aef02983189fa7	no	15

Warnings:

Information:					
This is not an USPTO supplied ADS fillable form					
2	Request for Corrected Filing Receipt	190823_15026_Filing_Receipt_AS_FILED.pdf	221779 ecb693898167c01a5e92039caa91ae158451a240	no	5
Warnings:					
Information:					
3	Request for Corrected Filing Receipt	190823_15026_Correction_of_Filing_Receipt_Cover_Letter_AS_FILED.pdf	30398 3b2c9a04a6b50ac4ddafc9add64a320d0198c4fd	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	752949		

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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
	Mike		Chasman	

Residence Information (Select One) ● US Residency Non US Residency Active US Military Service

City	State/Province	Country of Residence
Reston	VA	US

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210
Address 2	
City	Reston
State/Province	VA
Postal Code	20190
Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jeffrey		Chung	

Residence Information (Select One) ◉ US Residency Non US Residency Active US Military Service

City	State/Province	Country of Residence
Reston	VA	US

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210
Address 2	
City	Reston
State/Province	VA
Postal Code	20190
Country	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jason		Crabtree	

Residence Information (Select One) ◉ US Residency Non US Residency Active US Military Service

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

City	Vienna	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	10208 Westford Drive		
Address 2			
City	Vienna	State/Province	VA
Postal Code	22182	Country	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Luka		Jurukovski	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210		
Address 2			
City	Reston	State/Province	VA
Postal Code	20190	Country	US

Inventor 5 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Rich		Kelley	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210		
Address 2			
City	Reston	State/Province	VA
Postal Code	20190	Country	US

Inventor 6 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andre		Ludwig	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210		
Address 2			
City	Reston	**State/Province**	VA
Postal Code	20190	**Country**	US

Inventor 7 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Artem		Panasenkov	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	**State/Province**	VA	**Country of Residence**	US

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210		
Address 2			
City	Reston	**State/Province**	VA
Postal Code	20190	**Country**	US

Inventor 8 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andrew		Sellers	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Monument	**State/Province**	CO	**Country of Residence**	US

Mailing Address of Inventor:

Address 1	16258 Windsor Creek Dr.		
Address 2			
City	Monument	**State/Province**	CO
Postal Code	80132	**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	32318

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Email Address	USPTO@galvinpatentlaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES		
Attorney Docket Number	15026	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	18	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	82318		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/813097	2017-11-14
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/813097	Continuation in part of	15/616427	2017-06-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/616427	Continuation in part of	14/925974	2015-10-28
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/806697	2017-11-08

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/806697	Continuation in part of	15/376657	2016-12-13
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/376657	Continuation in part of	15/237625	2016-08-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/237625	Continuation in part of	15/206195	2016-07-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/206195	Continuation in part of	15/186453	2016-06-18
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/186453	Continuation in part of	15/166158	2016-05-26
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/166158	Continuation in part of	15/141752	2016-04-28
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	15/091563	2016-04-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	14/986536	2015-12-31
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	14/925974	2015-10-28

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/806697	2017-11-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/806697	Continuation in part of	15/343209	2016-11-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/343209	Continuation in part of	15/237625	2016-08-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/343209	Continuation in part of	15/229476	2016-08-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/229476	Continuation in part of	15/206195	2016-07-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/673368	2017-08-09
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/673368	Continuation in part of	15/376657	2016-12-13
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/849901	2017-12-21
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/849901	Continuation in part of	15/835312	2017-12-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/835312	Continuation in part of	15/186453	2016-06-18
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/849901	2017-12-21
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/849901	Continuation in part of	15/835436	2017-12-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/835436	Continuation in part of	15/790457	2017-10-23
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790457	Claims benefit of provisional	62/568298	2017-10-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790457	Continuation in part of	15/790327	2017-10-23
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Claims benefit of provisional	62/568291	2017-10-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Continuation in part of	15/616427	2017-06-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Continuation in part of	15/141752	2016-04-28

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

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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	Fractal Industries, Inc.

Mailing Address Information For Applicant:

Address 1	11091 Sunset Hill Road, Suite 210		
Address 2			
City	Reston	**State/Province**	VA
Country	US	Postal Code	20190
Phone Number	360-860-0832	Fax Number	
Email Address	jason@fractalindustries.com		

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
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
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	/Brian S. Boon/			Date (YYYY-MM-DD)	2019-05-14
First Name	Brian	Last Name	Boon	Registration Number	77640

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	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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.

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
16/412,340	05/14/2019	2447	0.00	15026	10	6

CONFIRMATION NO. 7063

CORRECTED FILING RECEIPT

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
SILVERDALE, WA 98383

Date Mailed: 08/28/2019

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)

Mike Chasman, Reston, VA;
Jeffrey Chung, Reston, VA;
Jason Crabtree, Vienna, VA;
Luka Jurukovski, Reston, VA;
Rich Kelley, Reston, VA;
Andre Ludwig, Reston, VA;
Artem Panasenkov, Reston, VA;
Andrew Sellers, Monument, CO;

Applicant(s)

Fractal Industries, Inc., Reston, VA;

Power of Attorney: The patent practitioners associated with Customer Number 82318

Domestic Priority data as claimed by applicant

This application is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/813,097 11/14/2017
which is a CIP of 15/616,427 06/07/2017
which is a CIP of 14/925,974 10/28/2015
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017

which is a CIP of 15/376,657 12/13/2016 PAT 10402906
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
which is a CIP of 15/206,195 07/08/2016
which is a CIP of 15/186,453 06/18/2016
which is a CIP of 15/166,158 05/26/2016
which is a CIP of 15/141,752 04/28/2016
which is a CIP of 15/091,563 04/05/2016 PAT 10204147
and is a CIP of 14/986,536 12/31/2015 PAT 10210255
and is a CIP of 14/925,974 10/28/2015
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017
which is a CIP of 15/343,209 11/04/2016
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
and is a CIP of 15/229,476 08/05/2016
which is a CIP of 15/206,195 07/08/2016
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/673,368 08/09/2017
which is a CIP of 15/376,657 12/13/2016 PAT 10402906
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,312 12/07/2017
which is a CIP of 15/186,453 06/18/2016
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,436 12/07/2017
which is a CIP of 15/790,457 10/23/2017
which claims benefit of 62/568,298 10/04/2017
and is a CIP of 15/790,327 10/23/2017
which claims benefit of 62/568,291 10/04/2017
and is a CIP of 15/616,427 06/07/2017
and is a CIP of 15/141,752 04/28/2016

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.

If Required, Foreign Filing License Granted: 05/31/2019
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/412,340**
Projected Publication Date: To Be Determined - pending completion of Missing Parts
Non-Publication Request: No
Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

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.

PTO/AIA/22 (03-13)
Approved for use through 7/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)	Docket Number (Optional) 2620
Application Number 14/263,998	Filed April 28, 2016
For GEOGRAPHIC MOBILE CUSTOMER RELATIONS MANAGEMENT	
Art Unit 3623	Examiner DICKERSON, TIPHANY B

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

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

		Fee	Small Entity Fee	Micro Entity Fee	
☑	One month (37 CFR 1.17(a)(1))	$200	$100	$50	$ 100
☐	Two months (37 CFR 1.17(a)(2))	$600	$300	$150	$
☐	Three months (37 CFR 1.17(a)(3))	$1,400	$700	$350	$
☐	Four months (37 CFR 1.17(a)(4))	$2,200	$1,100	$550	$
☐	Five months (37 CFR 1.17(a)(5))	$3,000	$1,500	$750	$

☑ Applicant asserts small entity status. See 37 CFR 1.27.

☐ Applicant certifies micro entity status. See 37 CFR 1.29.
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

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

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

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

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number _____.

☑ Payment made via EFS-Web.

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

I am the

☐ applicant.

☑ attorney or agent of record. Registration number 50966.

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

/Brian R. Galvin/	7/25/2016
Signature	Date
Brian R. Galvin	(360) 674-6233
Typed or printed name	Telephone Number

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

☑ * Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Privacy Act Statement

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

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

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

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number _____

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LEGAL NAME OF INVENTOR

Inventor: Mike Chasman Date (Optional) : _____

Signature: _____

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LEGAL NAME OF INVENTOR

Inventor: Jeffrey Chung _____ Date (Optional) : _____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Jason Crabtree Date (Optional) : _____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

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LEGAL NAME OF INVENTOR

Inventor: Luka Jurukovski Date (Optional) : _____

Signature: _____

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Title of Invention	SYSTEM AND METHOD FOR COMPLEX IT PROCESS ANNOTATION, TRACING, ANALYSIS, AND SIMULATION

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LEGAL NAME OF INVENTOR

Inventor: Richard Kelley Date (Optional) :_____

Signature: _____

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Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

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LEGAL NAME OF INVENTOR

Inventor: Andre Ludwig Date (Optional) :_____

Signature: Andre Ludwig

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LEGAL NAME OF INVENTOR

Inventor: Andrew Sellers Date (Optional) :_____

Signature: _____

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LEGAL NAME OF INVENTOR

Inventor: Artem Panasenkov Date (Optional) :_____

Signature: Artem Panasenkov

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Electronic Patent Application Fee Transmittal

Application Number:	16412340
Filing Date:	14-May-2019
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Filer:	Brian Russell Galvin/Kristen Riley
Attorney Docket Number:	15026

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	75	75
UTILITY SEARCH FEE	2111	1	330	330
UTILITY EXAMINATION FEE	2311	1	380	380
Pages:				
Claims:				
INDEPENDENT CLAIMS IN EXCESS OF 3	2201	3	230	690
Miscellaneous-Filing:				
LATE FILING FEE FOR OATH OR DECLARATION	2051	1	80	80

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with $0 paid	2252	1	300	300
Miscellaneous:				
		Total in USD ($)		**1855**

Electronic Acknowledgement Receipt

EFS ID:	37351097
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Kristen Riley
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	02-OCT-2019
Filing Date:	14-MAY-2019
Time Stamp:	20:02:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$1855
RAM confirmation Number	E201902K02364161
Deposit Account	
Authorized User	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Extension of Time	191002_15026_Extension_of_Time_AS_FILED.pdf	163193 0cdc9e00e325e72852ebeec2ecc2141ba1fa3770	no	2
Warnings:					
Information:					
2	Oath or Declaration filed	191002_15026_Declaration_Chasman_AS_FILED.pdf	99244 d581bf3ab2fbcfe1ceaa841f47a060638277420e	no	1
Warnings:					
Information:					
3	Oath or Declaration filed	191002_15026_Declaration_Chung_AS_FILED.pdf	114974 0162f4234af2680bdc761ee5ab0402f41819fc09	no	1
Warnings:					
Information:					
4	Oath or Declaration filed	191002_15026_Declaration_Crabtree_AS_FILED.pdf	116265 93e55638c89ad6196164b3caad184052bb7746b2	no	1
Warnings:					
Information:					
5	Oath or Declaration filed	191002_15026_Declaration_Jurukovski_AS_FILED.pdf	110473 9727a018d95f65206731992e65c5269660ba082e	no	1
Warnings:					
Information:					
6	Oath or Declaration filed	191002_15026_Declaration_Kelley_AS_FILED.pdf	107110 5e78ec23b331bbfd70434f05622316e1fd905deb	no	1
Warnings:					
Information:					

7	Oath or Declaration filed	191002_15026_Declaration_Ludwig_AS_FILED.pdf	102911 bc914509359a5713a5076b948d9dca85d390204b	no	1
Warnings:					
Information:					
8	Oath or Declaration filed	191002_15026_Declaration_Sellers_AS_FILED.pdf	116378 43a616d8b74e685ddc19cbef3988ff565e3de499	no	1
Warnings:					
Information:					
9	Oath or Declaration filed	191002_15026_Declaration_Panasenkov_AS_FILED.pdf	104763 e46d61e6af9e4e126bcdfe139d80ee2b61d88f0d	no	1
Warnings:					
Information:					
10	Fee Worksheet (SB06)	fee-info.pdf	40537 d24e1574837f398faebdb89f61d8240081f30989	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1075848		

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

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
16/412,340	05/14/2019	2447	1555	15026	10	6

CONFIRMATION NO. 7063

UPDATED FILING RECEIPT

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

OC000000111683210

Date Mailed: 10/04/2019

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)

Mike Chasman, Reston, VA;
Jeffrey Chung, Reston, VA;
Jason Crabtree, Vienna, VA;
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Artem Panasenkov, Reston, VA;
Andrew Sellers, Monument, CO;

Applicant(s)

Fractal Industries, Inc., Reston, VA;

Power of Attorney: The patent practitioners associated with Customer Number 82318

Domestic Priority data as claimed by applicant

This application is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/813,097 11/14/2017
which is a CIP of 15/616,427 06/07/2017
which is a CIP of 14/925,974 10/28/2015
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017

which is a CIP of 15/376,657 12/13/2016 PAT 10402906
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
which is a CIP of 15/206,195 07/08/2016
which is a CIP of 15/186,453 06/18/2016
which is a CIP of 15/166,158 05/26/2016
which is a CIP of 15/141,752 04/28/2016
which is a CIP of 15/091,563 04/05/2016 PAT 10204147
and is a CIP of 14/986,536 12/31/2015 PAT 10210255
and is a CIP of 14/925,974 10/28/2015
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017
which is a CIP of 15/343,209 11/04/2016
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
and is a CIP of 15/229,476 08/05/2016 PAT 10454791
which is a CIP of 15/206,195 07/08/2016
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/673,368 08/09/2017
which is a CIP of 15/376,657 12/13/2016 PAT 10402906
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,312 12/07/2017
which is a CIP of 15/186,453 06/18/2016
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,436 12/07/2017
which is a CIP of 15/790,457 10/23/2017
which claims benefit of 62/568,298 10/04/2017
and is a CIP of 15/790,327 10/23/2017
which claims benefit of 62/568,291 10/04/2017
and is a CIP of 15/616,427 06/07/2017
and is a CIP of 15/141,752 04/28/2016

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.

If Required, Foreign Filing License Granted: 05/31/2019
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/412,340**
Projected Publication Date: 01/09/2020
Non-Publication Request: No
Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

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

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LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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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.

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 16/412,340

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	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	10 minus 20 =	*	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	6 minus 3 =	* 3	x 230 =	690			
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	1475		TOTAL	

APPLICATION AS AMENDED - PART II

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

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/412,340	05/14/2019	Mike Chasman	15026

CONFIRMATION NO. 7063

PUBLICATION NOTICE

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

OC000000113836300

Title:SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

Publication No.US-2020-0014659-A1
Publication Date:01/09/2020

NOTICE OF PUBLICATION OF APPLICATION

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

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

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

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

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

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

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 16/412,340

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	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
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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	1475		TOTAL	

APPLICATION AS AMENDED - PART II

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

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/412,340	05/14/2019	Mike Chasman	15026

CONFIRMATION NO. 7063

WITHDRAWAL NOTICE

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

OC000000114537622

Date Mailed: 02/10/2020

Letter Regarding a New Notice and/or the Status of the Application

If a new notice or Filing Receipt is enclosed, applicant may disregard the previous notice mailed on 10/04/2019. The time period for reply runs from the mail date of the new notice. Within the time period for reply, applicant is required to file a reply in compliance with the requirements set forth in the new notice to avoid abandonment of the application.

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web. https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at http://www.uspto.gov/ebc.

If the reply is not filed electronically via EFS-Web, the reply must be accompanied by a copy of the new notice.

If the Office previously granted a petition to withdraw the holding of abandonment or a petition to revive under 37 CFR 1.137, the status of the application has been returned to pending status.

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**.

/rnegga/

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/412,340	05/14/2019	Mike Chasman	15026

CONFIRMATION NO. 7063

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

INFORMAL NOTICE

OC000000114537765

Date Mailed: 02/10/2020

INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

- A properly executed inventor's oath or declaration has not been received for the following inventor(s) *as named on the application data sheet:*
  Rich Kelley
  An inventor's oath or declaration in compliance with 37 CFR 1.63 or 1.64 executed by or with respect to each inventor must be submitted no later than the date on which the issue fee is paid in response to a notice requiring such fee. See 37 CFR 1.53(f).
  If the name of the inventor provided on the ADS is not correct, applicant must submit a request to correct the inventor name according to 37 CFR 1.48(f), accompanied by the appropriate fee under 37 CFR 1.17(i) and a corrected ADS in compliance with 37 CFR 1.76(c), i.e., identifying the information that is being changed with underlining for insertions, and strike-through or brackets for text removed.

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**.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
16/412,340	05/14/2019	2127	1555	15026	10	6

CONFIRMATION NO. 7063

UPDATED FILING RECEIPT

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

OC000000114537764

Date Mailed: 02/10/2020

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)

Mike Chasman, Reston, VA;
Jeffrey Chung, Reston, VA;
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Applicant(s)

Fractal Industries, Inc., Reston, VA;

Power of Attorney: The patent practitioners associated with Customer Number 82318

Domestic Priority data as claimed by applicant

This application is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/813,097 11/14/2017
which is a CIP of 15/616,427 06/07/2017
which is a CIP of 14/925,974 10/28/2015
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017

which is a CIP of 15/376,657 12/13/2016 PAT 10402906
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
which is a CIP of 15/206,195 07/08/2016
which is a CIP of 15/186,453 06/18/2016
which is a CIP of 15/166,158 05/26/2016
which is a CIP of 15/141,752 04/28/2016
which is a CIP of 15/091,563 04/05/2016 PAT 10204147
and is a CIP of 14/986,536 12/31/2015 PAT 10210255
and is a CIP of 14/925,974 10/28/2015
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017
which is a CIP of 15/343,209 11/04/2016
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
and is a CIP of 15/229,476 08/05/2016 PAT 10454791
which is a CIP of 15/206,195 07/08/2016
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/673,368 08/09/2017
which is a CIP of 15/376,657 12/13/2016 PAT 10402906
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,312 12/07/2017
which is a CIP of 15/186,453 06/18/2016
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,436 12/07/2017 PAT 10572828
which is a CIP of 15/790,457 10/23/2017
which claims benefit of 62/568,298 10/04/2017
and is a CIP of 15/790,327 10/23/2017
which claims benefit of 62/568,291 10/04/2017
and is a CIP of 15/616,427 06/07/2017
and is a CIP of 15/141,752 04/28/2016

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.

If Required, Foreign Filing License Granted: 05/31/2019
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/412,340**
Projected Publication Date: Not Applicable
Non-Publication Request: No
Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

Preliminary Class

703

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.

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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

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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NOT GRANTED

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

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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
	Mike		Chasman	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	~~Reston~~ Herndon	State/Province	VA	Country of Residence	US

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Address 2			
City	~~Reston~~ Herndon	State/Province	VA
Postal Code	~~20190~~ 20170	Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jeffrey		Chung	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

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City	Reston	State/Province	VA
Postal Code	20190	Country	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jason		Crabtree	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

City	Vienna	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	10208 Westford Drive		
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City	Vienna	State/Province	VA
Postal Code	22182	Country	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Luka		Jurukovski	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	~~Reston~~ Arlington	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

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Address 2			
City	~~Reston~~ Arlington	State/Province	VA
Postal Code	~~20190~~ 22203	Country	US

Inventor 5 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	~~Rich~~ Richard		Kelley	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

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Mailing Address of Inventor:

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City	~~Reston~~ Woodbridge	State/Province	VA
Postal Code	~~20190~~ 22192	Country	US

Inventor 6 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andre		Ludwig	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210		
Address 2			
City	Reston	**State/Province**	VA
Postal Code	20190	**Country**	US

Inventor 7 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Artem		Panasenkov	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

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Mailing Address of Inventor:

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City	Reston	**State/Province**	VA
Postal Code	~~20190~~ 20194	**Country**	US

Inventor 8 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andrew		Sellers	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Monument	**State/Province**	CO	**Country of Residence**	US

Mailing Address of Inventor:

Address 1	16258 Windsor Creek Dr.		
Address 2			
City	Monument	**State/Province**	CO
Postal Code	80132	**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	82318

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
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Email Address	USPTO@galvinpatentlaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES		
Attorney Docket Number	15026	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	18	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:

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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	82318		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/813097	2017-11-14
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/813097	Continuation in part of	15/616427	2017-06-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/616427	Continuation in part of	14/925974	2015-10-28
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/806697	2017-11-08

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/806697	Continuation in part of	15/376657	2016-12-13
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/376657	Continuation in part of	15/237625	2016-08-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/237625	Continuation in part of	15/206195	2016-07-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/206195	Continuation in part of	15/186453	2016-06-18
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/186453	Continuation in part of	15/166158	2016-05-26
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/166158	Continuation in part of	15/141752	2016-04-28
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	15/091563	2016-04-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	14/986536	2015-12-31
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	14/925974	2015-10-28

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/806697	2017-11-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/806697	Continuation in part of	15/343209	2016-11-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/343209	Continuation in part of	15/237625	2016-08-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/343209	Continuation in part of	15/229476	2016-08-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/229476	Continuation in part of	15/206195	2016-07-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/673368	2017-08-09
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/673368	Continuation in part of	15/376657	2016-12-13
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/849901	2017-12-21
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/849901	Continuation in part of	15/835312	2017-12-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/835312	Continuation in part of	15/186453	2016-06-18
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/849901	2017-12-21
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/849901	Continuation in part of	15/835436	2017-12-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/835436	Continuation in part of	15/790457	2017-10-23
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790457	Claims benefit of provisional	62/568298	2017-10-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790457	Continuation in part of	15/790327	2017-10-23
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Claims benefit of provisional	62/568291	2017-10-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Continuation in part of	15/616427	2017-06-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Continuation in part of	15/141752	2016-04-28

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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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	~~Fractal Industries, Inc.~~ QOMPLX, Inc.

Mailing Address Information For Applicant:

Address 1	11091 Sunset Hill Road, Suite ~~210~~ 200		
Address 2			
City	Reston	**State/Province**	VA
Country	US	Postal Code	20190
Phone Number	360-860-0832	Fax Number	
Email Address	jason@fractalindustries.com		

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

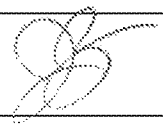
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

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				Date (YYYY-MM-DD)	2020-02-24
First Name	Brian	Last Name	Boon	Registration Number	77640

Additional Signature may be generated within this form by selecting the Add button.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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.

GALVIN PATENT LAW LLC

2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383
(360) 674-6233 (Office)

February 24, 2020

United States Patent & Trademark Office
PO Box 1450
Alexandria, VA 22313-1450

Re: Miscellaneous Communication to Applicant – No Action Count
Application Serial No. 16/412,340
Attorney Docket. 15026

Dear Commissioner:

In compliance with 37 CFR 1.48, please find enclosed a revised Application Data Sheet correcting the name of inventor Richard Kelley. Mr. Kelley's given name was inadvertently truncated as Rich Kelley on the originally-filed Application Data Sheet filed on May 14, 2019. Applicant is also enclosing the required petition fee of $70 and hereby requests that the USPTO accept the inventor declaration signed by Richard Kelley (as inventor) that was filed on May 14, 2019 as the inventor information on the ADS now matches the inventor declaration.

Unless notified by the USPTO, Applicant now considers this matter to be satisfactorily resolved.

Warm Regards,

/Brian S. Boon/

Brian S. Boon
Boon Intellectual Property Law, PLLC
Reg. No. 77,640

for Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383
(253) 358-7270

Enclosures

PTO/AIA/96 (08-12)
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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: QOMPLX, INC.

Application No./Patent No.: 16/412,340 Filed/Issue Date: May, 14, 2019

Titled: SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

QOMPLX, INC., a Corporation

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

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

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

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

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

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

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

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

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

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

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

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

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

1. From: CHASMAN, MIKE et al. To: FRACTAL INDUSTRIES, INC.

   The document was recorded in the United States Patent and Trademark Office at
   Reel 050337, Frame 0929, or for which a copy thereof is attached.

2. From: FRACTAL INDUSTRIES, INC. To: QOMPLX, INC.

   The document was recorded in the United States Patent and Trademark Office at
   Reel 051844, Frame 0889, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

PTO/AIA/96 (08-12)
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STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

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

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

4. From: _____ To: _____

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

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

5. From: _____ To: _____

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

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

6. From: _____ To: _____

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

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

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

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

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

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

/Brian S. Boon/	24 Feb 2020
Signature	Date
Brian S. Boon	77640
Printed or Typed Name	Title or Registration 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.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
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POWER OF ATTORNEY BY APPLICANT

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

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 82,318

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):

QOMPLX, Inc.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	
Name	Jason Crabtree		
Title	CEO		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ Total of 1 forms are submitted.

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.

HELLOSIGN

Audit Trail

TITLE	Request for Signature of the Power of Attorney for Galvin...
FILE NAME	190917_QOMPLX_POA_NEEDS SIGNATURE.pdf
DOCUMENT ID	e879b180855e2db05f1c6bd7a0ded5c424589276
STATUS	Completed

Document History

SENT	**09 / 17 / 2019** 15:48:08 UTC-5	Sent for signature to Jason Crabtree (jason@qomplx.com) from marjorie.conn@fractalindustries.com IP: 63.65.184.214
VIEWED	**09 / 17 / 2019** 15:56:00 UTC-5	Viewed by Jason Crabtree (jason@qomplx.com) IP: 174.128.180.23
SIGNED	**09 / 17 / 2019** 15:56:10 UTC-5	Signed by Jason Crabtree (jason@qomplx.com) IP: 174.128.180.23
COMPLETED	**09 / 17 / 2019** 15:56:10 UTC-5	The document has been completed.

PTO/AIA/01 (06-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number _____

filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Richard Kelley Date (Optional) : _____

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Electronic Patent Application Fee Transmittal

Application Number:	16412340
Filing Date:	14-May-2019
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Filer:	Brian Russell Galvin/Kristen Riley
Attorney Docket Number:	15026

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
LATE FILING FEE FOR OATH OR DECLARATION	2051	1	80	80
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**80**

Electronic Acknowledgement Receipt

EFS ID:	38676746
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Kristen Riley
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	24-FEB-2020
Filing Date:	14-MAY-2019
Time Stamp:	19:29:15
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$80
RAM confirmation Number	E20202NJ29281221
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	Request for Corrected Filing Receipt	200224_15026_Revised_ADS_AS_FILED.pdf	416247 a13c136c11ce6ab796c6efe869e44f33c52a62e3	no	15
Warnings:					
Information:					
2	Request under Rule 48 correcting inventorship	200224_15026_Inventor_Name_Correction_Cover_Letter_AS_FILED.pdf	57647 3d206964743161253e142cecb417bea7824ee6ab	no	1
Warnings:					
Information:					
3	Assignee showing of ownership per 37 CFR 3.73	200224_15026_373c_AS_FILED.pdf	120004 2d559be61fe4da535302f53683d26c28dd881f3f	no	3
Warnings:					
Information:					
4	Power of Attorney	200224_15026_POA_QOMPLX_AS_FILED.pdf	117267 5dfc8bd43e48843b3292e44325237cd18fe51f56	no	2
Warnings:					
Information:					
5	Oath or Declaration filed	200224_15026_Declaration_Kelley_AS_FILED.pdf	122886 cab6dda9d0f7679e4813062f2c7eb1a97372856d	no	1
Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	30459 f5bc8af5a2fe0e61f4be9816c24a992fd055d3e6	no	2
Warnings:					
Information:					

Total Files Size (in bytes):	864510

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

Office of the Chief Financial Officer

Document Code:WFEE

User :C46539

Sale Accounting Date:02/26/2020

Sale Item Reference Number	Effective Date
16412340	02/24/2020

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I20202P856325894	2830	PROCESSING FEE, EXCEPT PROV. APPLS.	$70.00	Salea

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
16/412,340	05/14/2019	Mike Chasman	15026

CONFIRMATION NO. 7063

POA ACCEPTANCE LETTER

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

OC000000114983897

Date Mailed: 02/27/2020

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/24/2020.

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**.

/mmasfaw/

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
16/412,340	05/14/2019	2127	1555	15026	10	6

CONFIRMATION NO. 7063

UPDATED FILING RECEIPT

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

OC000000114983898

Date Mailed: 02/27/2020

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)

Mike Chasman, Herndon, VA;
Jeffrey Chung, Reston, VA;
Jason Crabtree, Vienna, VA;
Luka Jurukovski, Arlington, VA;
Richard Kelley, Woodbridge, VA;
Andre Ludwig, Reston, VA;
Artem Panasenkov, Reston, VA;
Andrew Sellers, Monument, CO;

Applicant(s)

QOMPLX, Inc., Reston, VA;

Power of Attorney: The patent practitioners associated with Customer Number 82318

Domestic Priority data as claimed by applicant

This application is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/813,097 11/14/2017
which is a CIP of 15/616,427 06/07/2017
which is a CIP of 14/925,974 10/28/2015
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017

which is a CIP of 15/376,657 12/13/2016 PAT 10402906
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
which is a CIP of 15/206,195 07/08/2016
which is a CIP of 15/186,453 06/18/2016
which is a CIP of 15/166,158 05/26/2016
which is a CIP of 15/141,752 04/28/2016
which is a CIP of 15/091,563 04/05/2016 PAT 10204147
and is a CIP of 14/986,536 12/31/2015 PAT 10210255
and is a CIP of 14/925,974 10/28/2015
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017
which is a CIP of 15/343,209 11/04/2016
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
and is a CIP of 15/229,476 08/05/2016 PAT 10454791
which is a CIP of 15/206,195 07/08/2016
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/673,368 08/09/2017
which is a CIP of 15/376,657 12/13/2016 PAT 10402906
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,312 12/07/2017
which is a CIP of 15/186,453 06/18/2016
This application 16/412,340
is a CIP of 16/267,893 02/05/2019
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017
which is a CIP of 15/835,436 12/07/2017 PAT 10572828
which is a CIP of 15/790,457 10/23/2017
which claims benefit of 62/568,298 10/04/2017
and is a CIP of 15/790,327 10/23/2017
which claims benefit of 62/568,291 10/04/2017
and is a CIP of 15/616,427 06/07/2017
and is a CIP of 15/141,752 04/28/2016

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: Not Applicable

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

Preliminary Class

703

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

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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.

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NOT GRANTED

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UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/412,340	05/14/2019	Mike Chasman	15026

CONFIRMATION NO. 7063

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

37 CFR 1.48(f)
ACKNOWLEDGEMENT LETTER

OC000000114983900

Date Mailed: 02/27/2020

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 02/24/2020.

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**.

/mmasfaw/

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	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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
	Mike		Chasman	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	~~Reston~~ Herndon	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

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Address 2			
City	~~Reston~~ Herndon	State/Province	VA
Postal Code	~~20190~~ 20170	Country i	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jeffrey		Chung	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

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Address 2			
City	Reston	State/Province	VA
Postal Code	20190	Country i	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jason		Crabtree	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

City	Vienna	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	10208 Westford Drive		
Address 2			
City	Vienna	State/Province	VA
Postal Code	22182	Country	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Luka		Jurukovski	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	~~Reston~~ Arlington	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	~~11091 Sunset Hill Road, Suite 210~~ 700 N Randolph St. Apt 1500		
Address 2			
City	~~Reston~~ Arlington	State/Province	VA
Postal Code	~~20190~~ 22203	Country	US

Inventor 5 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	~~Rich~~ Richard		Kelley	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	~~Reston~~ Woodbridge	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

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Address 2			
City	~~Reston~~ Woodbridge	State/Province	VA
Postal Code	~~20190~~ 22192	Country	US

Inventor 6 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andre		Ludwig	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Mailing Address of Inventor:

Address 1	11091 Sunset Hill Road, Suite 210		
Address 2			
City	Reston	**State/Province**	VA
Postal Code	20190	**Country**	US

Inventor 7 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Artem		Panasenkov	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

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Address 2			
City	Reston	**State/Province**	VA
Postal Code	~~20190~~ 20194	**Country**	US

Inventor 8 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andrew		Sellers	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Monument	State/Province	CO	Country of Residence	US

Mailing Address of Inventor:

Address 1	16258 Windsor Creek Dr.		
Address 2			
City	Monument	**State/Province**	CO
Postal Code	80132	**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	82318

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Email Address	USPTO@galvinpatentlaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES		
Attorney Docket Number	15026	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	18	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	82318		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/813097	2017-11-14
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/813097	Continuation in part of	15/616427	2017-06-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/616427	Continuation in part of	14/925974	2015-10-28
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/806697	2017-11-08

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/806697	Continuation in part of	15/376657	2016-12-13
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/376657	Continuation in part of	15/237625	2016-08-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/237625	Continuation in part of	15/206195	2016-07-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/206195	Continuation in part of	15/186453	2016-06-18
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/186453	Continuation in part of	15/166158	2016-05-26
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/166158	Continuation in part of	15/141752	2016-04-28
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	15/091563	2016-04-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	14/986536	2015-12-31
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/141752	Continuation in part of	14/925974	2015-10-28

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/806697	2017-11-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/806697	Continuation in part of	15/343209	2016-11-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/343209	Continuation in part of	15/237625	2016-08-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/343209	Continuation in part of	15/229476	2016-08-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/229476	Continuation in part of	15/206195	2016-07-08
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/673368	2017-08-09
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/673368	Continuation in part of	15/376657	2016-12-13
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/849901	2017-12-21
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/849901	Continuation in part of	15/835312	2017-12-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/835312	Continuation in part of	15/186453	2016-06-18
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation in part of	16/267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/267893	Continuation in part of	16/248133	2019-01-15

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/248133	Continuation in part of	15/849901	2017-12-21
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/849901	Continuation in part of	15/835436	2017-12-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/835436	Continuation in part of	15/790457	2017-10-23
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790457	Claims benefit of provisional	62/568298	2017-10-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790457	Continuation in part of	15/790327	2017-10-23
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Claims benefit of provisional	62/568291	2017-10-04
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Continuation in part of	15/616427	2017-06-07
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/790327	Continuation in part of	15/141752	2016-04-28

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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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	~~Fractal Industries, Inc.~~ QOMPLX, Inc.

Mailing Address Information For Applicant:

Address 1	~~11091 Sunset Hill Road, Suite 210~~ ~~200~~ 1775 Tysons Blvd., Suite 800		
Address 2			
City	~~Reston~~ Tysons	**State/Province**	VA
Country	US	Postal Code	~~20190~~ 22102
Phone Number	360-860-0832	Fax Number	
Email Address	jason@fractalindustries.com		

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country		Postal Code	
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				Date (YYYY-MM-DD)	2020-11-17
First Name	Brian	Last Name	Boon	Registration Number	77640

Additional Signature may be generated within this form by selecting the Add button.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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:	41278452
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Alexandria Wright
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	02-DEC-2020
Filing Date:	14-MAY-2019
Time Stamp:	18:02:03
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	201202_15026_Revised_ADS_AS_FILED.pdf	2437329 6dd515330ad0956bdf12aeab3ab59b580203d95d	no	15

Warnings:

Information:	
This is not an USPTO supplied ADS fillable form	
Total Files Size (in bytes):	2437329

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/412,340	05/14/2019	Mike Chasman	15026	7063

82318 7590 05/04/2022

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EXAMINER	
KORSAK, OLEG	

ART UNIT	PAPER NUMBER
2492	

NOTIFICATION DATE	DELIVERY MODE
05/04/2022	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):

USPTO@GALVINPATENTLAW.COM
eofficeaction@appcoll.com

Office Action Summary	Application No. 16/412,340	Applicant(s) Chasman et al.	
	Examiner OLEG KORSAK	Art Unit 2492	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 05/14/2019.

☐ 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) 1-10 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) 1-10 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 05/14/2019 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 See Continuation Sheet.

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

4) ☐ Other: _____.

Continuation of Attachment(s) 2) Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date: 2x07/03/2019;07/09/2019;07/10/2019;07/24/2019/08/01/2019

DETAILED ACTION

This communication is responsive to the application # 16/412,340 filed on May 14, 2019. Claims 1-10 are pending and are directed toward SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES.

Notice of Pre-AIA or AIA Status

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

Priority

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(e) as follows:

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of 35 U.S.C. 112(a) or the first paragraph of pre-AIA 35 U.S.C. 112, except for the best mode requirement. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994)

The disclosure of the prior-filed applications No. 14/095919 and/or 12/963411, fails to provide adequate support or enablement in the manner provided by 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph for one or more claims of this application. Specifically, independent claims recite terms "midserver", "Ansible server", and "Kerberos" as limitations, however no such terms were disclosed in parent applications. Therefore Claims 1-10 do not receive benefit of an earlier filing date.

Claim Objections

Claims 5 and 6 are objected to because of the following informalities: claimed "system of claim 4" should be the "method of claim 4".

Claim 10 is objected because of missing space in "steps of:receiving".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

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.

Claim 40 is rejected under 35 U.S.C. 102(a)(2) as being unpatentable over Bonomi et al. (US 2018/0115519, Pub. Date: Apr. 26, 2018, priority Oct. 21, 2016.), hereinafter referred to as Bonomi.

As per claim 1, Bonomi teaches a system for ingestion of data into a cloud-based service from an external network (The system architecture 100 supports security technology methods and algorithms that enable co-location of the IT /OT devices and other infrastructure components on the fognode 124 that enable operation of the IT and OT software components without

interfering with other software components. It also enables a secure middleware infrastructure and communication bus for secure data exchange, as well as prevents inadvertent interference and Denial of Service (DOS) effects on the system components due to failures and defects in one set of software components that are co-located. In some embodiments the system architecture 100 prevents malicious Denial of Service (DOS) effects in the system architecture 100 components if vulnerabilities are present in a set of software components that are co-located with one another. Bonomi, [0056]), comprising:

a midserver configured to function as an interface between an external network and a cloud-based service comprising at least a processor, a memory, and a plurality of programming instructions stored in the memory and operating on the processor (the present disclosure is directed to a system, comprising: (a) a forwarder that provides one-way data publishing connectivity to a cloud; and (b) a data bus that provides domain-to-domain secure messaging between a plurality of domains, Bonomi, [0004]):

receive data from a plurality of computing devices on the external network (The system architecture 100 enables different monitoring and auditing components that support various logging and alarm collection and forwarding to cloud controller (NSM 128). Bonomi, [0057]);

run one or more containerized services to process the received data (The system architecture 100 enables container/isolation technology at the foglet 122 that enables rapid integration of IT/OT device management software without compromising security. This feature is advantageous as the IT/OT device types are large across varied vendors, each type requiring different software components across different

operating systems. Bonomi, [0054]); and

securely transmit the processed data to a cloud-based service (The system architecture 100 also implements mechanisms for secure application hosting. Rich application deployment at the edge of a network/domain is an important premise in fog computing. Application hosting is primarily implemented for performing real time computation on critical data at locations closer to its source, protect the data from theft and associated loss of intellectual property, reduce the data movement to cloud, and provide for rapid deployment of richer applications from the cloud and in edge analytics applications that refine analytics models in the cloud and on the foglet 122. Application hosting performed from the cloud 106 supports various security constructs. Bonomi, [0058]).

As per claim 2, Bonomi teaches the system of claim 1, wherein the containerized services include one or more of the following types of containerized services: traffic processors, sensors, management services, and utilities (The system architecture 100 also provides for robust application isolation security. In some embodiments, the fognode 124 and its foglet 122 implement mechanisms for isolating applications from each other for variety of reason like OT network security, application protection, multi-tenancy, and data protection-just to name a few. Strict isolation of OT applications and services, such as applications executed within the OT virtual machines 110A-B, is also advantageous to prevent inadvertent interference, Denial of Service (DOS), and malicious DOS from a compromised application. Bonomi, [0055]).

As per claim 3, Bonomi teaches the system of claim 1, wherein the midserver is installed at the same location from which some part of the external network is operated (Typically, the IT infrastructure is co-located in an operations center along with the OT infrastructure (for example in the same manufacturing facility location). Bonomi, [0011]).

Method claims 4-6 are drawn to the method of using the corresponding apparatus claimed in claims 1-3. Therefore method claims 4-6 correspond to apparatus claims 1-3 and are rejected for the same reasons of anticipation as used above.

Claims 8 and 9 has limitations similar to those treated in the above rejection, and are met by the references as discussed above, and are rejected for the same reasons of anticipation as used above. For "establishing a virtual machine within the virtual network" see "Initiating virtual machines for a plurality of domains" (Bonomi, FIG. 3).

Claim Rejections - 35 USC § 103

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.

Claim 7 is rejected under 35 U.S.C. 103 as being unpatentable over Bonomi et al. (US 2018/0115519, Pub. Date: Apr. 26, 2018, priority Oct. 21, 2016.), in view of Himes (Using Ansible to generate complex configs, May 31, 2018, 5 pages), in view of MatthiasLohr (Provide a method Peer.close(), Mar 27, 2013, 5 pages), hereinafter referred to as Bonomi, Himes, and MatthiasLohr.

As per claim 7, Bonomi teaches a method for deployment of a midserver for ingestion of data into a cloud-based service from an external network (*The system architecture 100 supports security technology methods and algorithms that enable co-location of the IT/OT devices and other infrastructure components on the fognode 124 that enable operation of the IT and OT software components without interfering with other software components. It also enables a*

secure middleware infrastructure and communication bus for secure data exchange, as well as prevents inadvertent interference and Denial of Service (DOS) effects on the system components due to failures and defects in one set of software components that are co-located. In some embodiments the system architecture 100 prevents malicious Denial of Service (DOS) effects in the system architecture 100 components if vulnerabilities are present in a set of software components that are co-located with one another. Bonomi, [0056]), comprising the steps of:

installing a midserver on an external network (*FIG. 4 is a diagrammatic representation of an example machine in the form of a computer system 1, within which a set of instructions for causing the machine to perform any one or more of the methodologies discussed herein may be executed. In various example embodiments, the machine operates as a standalone device or may be connected (e.g., networked) to other machines. In a networked deployment, the machine may operate in the capacity of a server or a client machine in a server-client network environment, or as a peer machine in a peer-to-peer (or distributed) network environment. Bonomi, [0085]*);

establishing a secure peer-to-peer connection from the midserver (*In a networked deployment, the machine may operate in the capacity of a server or a client machine in a server-client network environment, or as a peer machine in a peer-to-peer (or distributed) network environment. Bonomi, [0085]*) to an ~~Ansible~~ server at the cloud-based service (*A forwarder 108 present in the forwarder VM 142 represents a set of docker containers that is used for forwarding messages received from the data bus 109 to appropriate cloud layer in a secure manner. Bonomi, [0076]*);

Although Bonomi teaches a peer-to-peer network environment, as cited above, he does **not** teach Ansible server, Himes however teaches an Ansible server (*Using Ansible to generate complex configs. Himes, page 1*).

> Bonomi in view of Himes are analogous art to the claimed invention, because they are from a similar field of endeavor of systems, components and methodologies for providing secure communication between computer systems. It would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify Bonomi in view of Himes. This would have been desirable for a good way to generate router/switch configs easily and quickly. Most of the tools I have seen are either not flexible enough or homebrew and difficult to maintain. Ansible gives something I can use to build configs for secure areas, non-secure areas, different geographical locations, different purposes, etc without storing the same data (ACLs, IOSs etc) in many different locations. (Himes, page 1).

initiating an Ansible playbook, which downloads a configuration template (*We are going to start by calling the playbook with "ansible playbook templates.yaml". Himes, page 1*), retrieves security information for the external network at which the midserver is installed (*to build configs for secure areas, non-secure areas, Himes, page 1*), and configures the midserver to establish a primary backhaul virtual private network between the midserver and the cloud-based service (*if you wanted to you could easily have it build smaller config sections: Build a new VRF section for each of your backhaul routers. VXLAN for your data-center routers, etc. Himes, page 1*);

Bonomi in view of Himes does **not** teach closing the peer-to-peer connection, MatthiasLohr however teaches closing the peer-to-peer connection (*it would be nice if the connection to the key servercan be closed after a p2p connection has been established. MatthiasLohr, page 1*).

> Bonomi in view of Himes in view of MatthiasLohr are analogous art to the claimed invention, because they are from a similar field of endeavor of systems, components and methodologies for providing secure communication between computer systems. It would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify Bonomi in view of Himes in view of MatthiasLohr. This would have been useful if there is Peer.close() method (MatthiasLohr, page 1).

Claim 10 is rejected under 35 U.S.C. 103 as being unpatentable over Microsoft (What's New in Kerberos Authentication, 08/31/2016, 22 pages), in view of Bonomi et al.

(US 2018/0115519, Pub. Date: Apr. 26, 2018, priority Oct. 21, 2016.), hereinafter referred to as Bonomi, Himes, and Matthias Lohr.

As per **claim 10**, Bonomi teaches a method for preventing Kerberos-based cyberattacks (*any front-end service that can delegate to a resource service represents a potential attack point. Microsoft, page 14*) ~~using a midserver for ingestion of data into a cloud based service from an external network~~, comprising the steps of:

receiving Kerberos-based messaging between user computers, domain controllers, and Kerberos-based services (*Kerberos authentication can be leveraged to address lack of connectivity to the domain controller from outside the corporate firewall. To do so, it proxies Kerberos authentication and password change messages for users who are requesting domain access through Direct Access or Remote Desktop Services, Microsoft, page 2*);

maintaining a ledger of the monitored messages (*The new KDC operational log is located in Application and Services/Microsoft/Windows/Kerberos-Key-Distribution-Center/Operational. It provides information that can help you determine the cause of a certificate logon failure or when the KDC service was stopped or started... The new Kerberos operational log is located in Application and Services/Microsoft/Windows/Security-Kerberos/Operational . It provides information that can help you determine the cause of a failure without collecting a trace and contacting Microsoft Product Support. Microsoft, page 18*);

comparing the ledger against expected messages for Kerberos authentications to confirm the validity of the Kerberos authentication traffic (*102: Error: Certificate based authentication failure due to KDC certificate validation failure; 103: Error: Certificate based authentication failure due to client certificate validation failure; 106: Error: Certificate based authentication failure due to KDC certificate validation failure due to KDC EKU missing; 107: Error:*

Certificate based authentication failure due to KDC certificate validation failure due to wrong domain name. Microsoft, page 19).

Microsoft does **not** teach using a midserver for ingestion of data into a cloud-based service from an external network, Bonomi however teaches using a midserver for ingestion of data into a cloud-based service from an external network (*Bonomi, FIG.2*)

> Microsoft in view of Bonomi are analogous art to the claimed invention, because they are from a similar field of endeavor of systems, components and methodologies for providing secure communication between computer systems. It would have been obvious to a person of ordinary skill in the art before the effective filing date of the claimed invention to modify Microsoft in view of Bonomi. This would have been desirable because the system architecture 100 supports security technology methods and algorithms that enable co-location of the IT /OT devices and other infrastructure components on the fognode 124 that enable operation of the IT and OT software components without interfering with other software components. It also enables a secure middleware infrastructure and communication bus for secure data exchange, as well as prevents inadvertent interference and Denial of Service (DOS) effects on the system components due to failures and defects in one set of software components that are co-located. In some embodiments the system architecture 100 prevents malicious Denial of Service (DOS) effects in the system architecture 100 components if vulnerabilities are present in a set of software components that are co-located with one another. (Bonomi, [0056]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLEG KORSAK whose telephone number is (571)270-1938. The examiner can normally be reached on Monday-Friday 7:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571)272-4006. 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.

/OLEG KORSAK/

Primary Examiner, Art Unit 2492

Notice of References Cited	Application/Control No. 16/412,340	Applicant(s)/Patent Under Reexamination Chasman et al.	
	Examiner OLEG KORSAK	Art Unit 2492	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-20180115519-A1	04-2018	Bonomi; Flavio	H04L63/1458	1/1
	B					
	C					
	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	Himes (Using Ansible to generate complex configs, May 31, 2018, 5 pages) (Year: 2018)
	V	MatthiasLohr (Provide a method Peer.close(), Mar 27, 2013, 5 pages) (Year: 2013)
	W	Microsoft (What's New in Kerberos Authentication, 08/31/2016, 22 pages) (Year: 2016)
	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
	16/412,340	Chasman et al.
	Examiner	Art Unit
	OLEG KORSAK	2492

✓	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	05/01/2022								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/412,340	Chasman et al.
	Examiner	Art Unit
	OLEG KORSAK	2492

CPC - Searched*		
Symbol	Date	Examiner
H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	05/01/2022	OK

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
H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	05/01/2022	OK
GOOGLE NPL search	05/01/2022	OK
search limited by keywords	05/01/2022	OK

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

/OLEG KORSAK/ Primary Examiner, Art Unit 2492	

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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	7072863	B1	2006-07-04	PHILIPS, G. Michael et al.	

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	20110208681	A1	2011-08-25	KUECUEKYAN, Horen	
	2	20160092557	A1	2016-03-31	STOJANOVIC, Alexander Sasha et al.	
	3	20070021955	A1	2007-01-25	TOLONE, William J. et al.	
	4	20070043656	A1	2007-02-22	LANCASTER, Clifton J.	
	5	20080221949	A1	2008-09-11	DELURGIO, Philip D. et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /O.K/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	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]

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	/OLEG KORSAK/	Date Considered	04/27/2022

*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. /O.K/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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	/Brian S. Boon/	Date (YYYY-MM-DD)	2019-07-08
Name/Print	Brian S. Boon	Registration Number	77640

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

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Bibliographic Data

Application No: 16/412,340

Foreign Priority claimed: ○ Yes ◉ No

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

Verified and Acknowledged: /OLEG KORSAK/ Examiner's Signature | Initials

Title: SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
05/14/2019	703	2492	15026
RULE			

APPLICANTS

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Andrew Sellers, Monument, CO, UNITED STATES

CONTINUING DATA

This application is a CIP of 16267893 02/05/2019

16267893 is a CIP of 16248133 01/15/2019

16248133 is a CIP of 15849901 12/21/2017 PAT 11023284

15849901 is a CIP of 15835312 12/07/2017 PAT 11055451

15849901 is a CIP of 15835436 12/07/2017 PAT 10572828

16248133 is a CIP of 15813097 11/14/2017

16248133 is a CIP of 15806697 11/08/2017ABN

15835436 is a CIP of 15790457 10/23/2017 PAT 10884999

15790457 is a CIP of 15790327 10/23/2017 PAT 10860951

15790457 has PRO of 62568298 10/04/2017

15790327 has PRO of 62568291 10/04/2017

16248133 is a CIP of 15673368 08/09/2017

15813097 is a CIP of 15616427 06/07/2017ABN

15790327 is a CIP of 15616427 06/07/2017ABN

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15616427 is a CIP of 14925974 10/28/2015ABN

15141752 is a CIP of 14925974 10/28/2015ABN

FOREIGN APPLICATIONS

CHINA CN201210393725.2 10/17/2012

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FILING FEE RECEIVED

$1,855

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	1	20090222562	A1	2009-09-03	LIU, Jie et al.	
	2	20140156806	A1	2014-06-05	KARPISTSENKO, Andre et al.	

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	Attorney Docket Number	15026

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Doc description: Information Disclosure Statement (IDS) Filed

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5669000	A	1997-09-16	JESSEN, Jay Alan et al.	

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	1	20150169294	A1	2015-06-18	BROCK, Bishop C. et al.	
	2	20120266244	A1	2012-10-18	GREEN, Jonathon Patrick et al.	
	3	20160364307	A1	2016-12-15	GARG, Vibhav et al.	
	4	20150149979	A1	2015-05-28	TALBY, David et al.	
	5	20170323089	A1	2017-11-09	DUGGAL, Dave M. et al.	

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	1	105302532	CN	B	2018-06-29	CHANGMING, FU		

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PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	22	("20090222562" OR "20140156806" OR "20140279762" OR "20150379424" OR "20160078361" OR "20170193110" OR "20120266244" OR "20150149979" OR "20150169294" OR "20160364307" OR "20170323089" OR "5669000" OR "20070021955" OR "20070043656" OR "20080221949" OR "20110208681" OR "20160092557" OR "7072863" OR "20080027690" OR "20120116743" OR "20150186427" OR "20160164905").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/30 01:12 PM
L2	50	((("QOMPLX") near3 ("Inc"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/04/30 01:12 PM
L3	499	((("CHASMAN") near3 ("Mike")) OR (("CHUNG") near3 ("Jeffrey")) OR (("CRABTREE") near3 ("Jason")) OR (("JURUKOVSKI") near3 ("Luka")) OR (("KELLEY") near3 ("Richard")) OR (("LUDWIG") near3 ("Andre")) OR (("PANASENKOV") near3 ("Artem")) OR (("SELLERS") near3 ("Andrew"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:13 PM
L4	1	(L2 OR L3) AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:14 PM
L5	187100	(H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:16 PM

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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(Not for submission under 37 CFR 1.99)

Application Number	16412340
Filing Date	2019-05-14
First Named Inventor	Mike Chasman
Art Unit	2447
Examiner Name	-
Attorney Docket Number	15026

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	2	20150186427	A1	2015-07-02	LOGOTHETIS, DIONYSIOS et al.	
	3	20120116743	A1	2015-05-10	AYALA, RICHARD et al.	
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Signature	/Brian S. Boon/	Date (YYYY-MM-DD)	2019-07-03
Name/Print	Brian S. Boon	Registration Number	77,640

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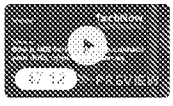
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MID Server capabilities - ServiceNow IT Operations ...

MID Server capabilities There can be multiple MID Servers configured in a given range of IPs. Each of the MID Server can be leveraged for multiple purposes.

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MID Server — ServiceNow Elite

Nov 9, 2016 — The Management, Instrumentation, and Discovery (MID) Server is a Java application that runs as a Windows service or UNIX daemon.

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ServiceNow Discovery: MID Server Architecture - QuickNexus

For starters, the MID Servers should be located on your network that has the maximum visibility to the rest of the network. For example, if your Networks are ...

https://sysmgt.lenovofiles.com › help › topic › servicen...

Installing Multiple MID Servers on a single Windows system

You can install multiple MID Servers on a single host or on a virtual machine using Windows. This is useful when one MID Server is down so another can take ...

https://github.com › tmoers › docker-mid-server

All versions of ServiceNow MID Server as Docker Container

A note on Apache Log4j Vulnerability (CVE-2021-44228). According to KB1000959 the MID servers are not affected by this vulnerability. However, as the MID Server ...

Related searches

mid server **servicenow**

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	2	20140279762	A1	2014-09-18	XAYPANYA, Tommy et al.	
	3	20170193110	A1	2017-07-06	CRABTREE, Jason et al.	
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☒ 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	/Brian S. Boon/	Date (YYYY-MM-DD)	2019-07-23
Name/Print	Brian S. Boon	Registration Number	77640

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. /O.K/

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. /O.K/

Electronic Acknowledgement Receipt

EFS ID:	45839943
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Aura Morrey
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	31-MAY-2022
Filing Date:	14-MAY-2019
Time Stamp:	17:25:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Request for Reconsideration-After Non-Final Rejection	22051_15026_OAR_1_AS_FILED.pdf	36139 a4f2da5902d5f6bf4b7aa738646240614 39db57c	no	8

Warnings:

Information:	
Total Files Size (in bytes):	36139

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit: 2492 Examiner: Korask, Oleg

In Re:	Mike Chasman et al.
Case:	15026
Serial No.:	16/412,340
Filed:	May 14, 2019
Subject:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICE

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

Dear Commissioner:

Response A

In the Claims

All of the claims standing for examination are reproduced below with appropriate status indication.

1. (Currently amended) A system for ingestion of data into a cloud-based service from an external network, comprising:

a midserver ~~configured to function as an interface between an external network and a cloud-based service~~ comprising at least a processor, a memory, and a plurality of programming instructions stored in the memory and operating on the processor, wherein the plurality of programming instructions, when operating on the processor, cause the processor to:

automatically install a virtual appliance software application, the virtual appliance software application configured to automatically load a plurality of stored configurations on the midserver;

establish a secure network connection to an external network;

receive data over a local network from a plurality of computing devices ~~on the external network~~;

apply a plurality of transformations to at least a portion of the received data; and

retransmit the received data over the secure connection as a single data stream.

~~run one or more containerized services to process the received data; and~~

~~securely transmit the processed data to a cloud-based service.~~

2. (Original) The system of claim 1, wherein the containerized services include one or more of the following types of containerized services: traffic processors, sensors, management services, and utilities.

3. (Original) The system of claim 1, wherein the midserver is installed at the same location from which some part of the external network is operated.

4. (Currently amended) A method for ingestion of data into a cloud-based service from an external network, comprising the steps of:

installing a midserver ~~as an interface between an external network and a cloud-based service, the midserver~~ comprising at least a processor, a memory, and a plurality of programming instructions stored in the memory and operating on the processor[[:]];

automatically installing, using the midserver, a virtual appliance software application, the virtual appliance software application configured to automatically load a plurality of stored configurations on the midserver;

establishing a secure network connection from the midserver to an external network;

~~receive~~ receiving data over a local network from a plurality of computing devices ~~on the external network~~;

applying a plurality of transformations to at least a portion of the received data; and

retransmitting the received data over the secure connection as a single data stream.

~~run one or more containerized services to process the received data; and~~

~~securely transmit the processed data to a cloud-based service.~~

5. (Currently amended) The ~~system~~ method of claim 4, further comprising the step of including one or more of the following types of containerized services: traffic processors, sensors, management services, and utilities.

6. (Currently amended) The ~~system~~ method of claim 4, further comprising the step of installing the midserver at the same location from which some part of the external network is operated.

7. (Canceled)

8. (Original) A method for deployment of a midserver for ingestion of data into a cloud-based service from an external network wherein the external network comprises a virtual network operated on a cloud computing service, comprising the steps of:

establishing on the cloud computing service a virtual network controlled by the cloud-based service;

establishing a virtual machine on the virtual network controlled by the cloud-based service;

configuring the virtual machine on the virtual network controlled by the cloud-based service as a virtual network peer of the external network;

streaming data from the external network to the virtual machine configured as a virtual network peer of the external network; and

forwarding the streamed data from the virtual network peer to the cloud-based service.

9. (Original) A method for deployment of a midserver for ingestion of data into a cloud-based service from an external network wherein the external network comprises a virtual network operated on a cloud computing service, comprising the steps of:

establishing a virtual machine within the virtual network;

configuring the virtual machine on the virtual network as a virtual network peer of the external network;

streaming data from the external network to the virtual machine configured as a virtual network peer of the external network; and

forwarding the streamed data from the virtual network peer to the cloud-based service.

10. (Canceled)

REMARKS

This communication is responsive to the office action pertaining to the instant invention that was mailed on May 4, 2022.

From the Action:

The disclosure of the prior-filed applications No. 14/095919 and/or 12/963411, fails to provide adequate support or enablement in the manner provided by 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph for one or more claims of this application. Specifically, independent claims recite terms "midserver", "Ansible server", and "Kerberos" as limitations, however no such terms were disclosed in parent applications. Therefore Claims 1-10 do not receive benefit of an earlier filing date.

Applicant's Response:

The two applications cited, numbers 14/095,919 and 12/963,411, were not claimed as priority documents in the Application Data Sheet and are not in any way related to the instant application. It appears this was a typographical error, but the error prevents applicant from meaningfully responding to the priority issue cited by the examiner. Nevertheless, applicant concedes that Bonomi's effective filing date precedes the effective filing date of all claims, and Bonomi is therefore conceded to be prior art.

From the Action:

Claims 5 and 6 are objected to because of the following informalities: claimed "system of claim 4" should be the "method of claim 4".

Claim 10 is objected because of missing space in "steps of:receiving".

Appropriate correction is required.

Applicant's Response:

The appropriate corrections have been made.

From the Action:

Claim 40 is rejected under 35 U.S.C. §102(a)(2) as being unpatentable over Bonomi et al. (US 2018/0115519, Pub. Date: Apr. 26, 2018, priority Oct. 21, 2016.), hereinafter referred to as Bonomi.

Applicant's Response:

Applicant assumes the examiner's §102 rejection is directed to Claim 1 and argues accordingly.

The relevant claims have been amended to more particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Claim 1 has been amended to more clearly teach the functions of the midserver. Support for the amendments may be found in at least ¶¶[032-041] and ¶[060] of the disclosure; no new matter has been added.

The amendments now clearly teach the operation of the midserver, which automatically deploys a virtual appliance software application, which loads configuration parameters and then receives streaming data from multiple hosts on an internal network to retransmit to an external network as a single data stream. The received data may be transformed such as to encrypt data that is received in an insecure state before transmitting over the secure connection, and multiple data streams are in effect unified for easier processing at the destination. These operations are described in detail in at least the noted supporting portions of the disclosure. This midserver operations clearly distinguishes over the reference of Bonomi (and the additional references cited below in further rejections), as Bonomi merely teaches a form of firewall that selectively receives and blocks connections between local and external networks (Bonomi, Abstract and at least ¶[0030]). Bonomi does not provide an automatically-deployed virtual appliance software application that receives *and transforms* multiple data streams for retransmission over a single, secured data stream to an external host.

Thus, for reasons argued above, Bonomi does not teach each and every limitation of claim 1, as amended. Claim 1 is therefore clearly patentable over the reference, and all dependent claims are therefore similarly patentable at least as they depend from a patentable base claim. Applicant requests the §102 rejection of claim 1 be withdrawn, accordingly.

From the Action:

Claim 7 is rejected under 35 U.S.C. §103 as being unpatentable over Bonomi et al. (US 2018/0115519, Pub. Date: Apr. 26, 2018, priority Oct. 21, 2016.), in view of Himes (Using Ansible to generate complex configs, May 31, 2018, 5 pages), in view of MatthiasLohr (Provide a method Peer.close(), Mar 27, 2013, 5 pages), hereinafter referred to as Bonomi, Himes, and MatthiasLohr.

Applicant's Response:

Claims 7 and 10 have been canceled.

From the Action:

Claim 10 is rejected under 35 U.S.C. §103 as being unpatentable over Microsoft (What's New in Kerberos Authentication, 08/31/2016, 22 pages), in view of Bonomi et al. (US 2018/0115519, Pub. Date: Apr. 26, 2018, priority Oct. 21, 2016.), hereinafter referred to as Bonomi, Himes, and MatthiasLohr.

Applicant's Response:

Claims 7 and 10 have been canceled.

SUMMARY

As all of the claims (as amended) are believed to be, and to have been shown to be, patentable over the references cited, applicant respectfully requests that the case be passed quickly to issue. If any time extension is needed beyond any extension requested with this amendment, such extension is hereby requested.

Respectfully Submitted,

Mike Chasman

By: */BRIAN R. GALVIN/*

Brian R Galvin
Reg. No. 50,966

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May 31, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/412,340	05/14/2019	Mike Chasman	15026	7063

82318 7590 06/16/2022

Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

EXAMINER	
KORSAK, OLEG	

ART UNIT	PAPER NUMBER
2492	

NOTIFICATION DATE	DELIVERY MODE
06/16/2022	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):

USPTO@GALVINPATENTLAW.COM
eofficeaction@appcoll.com

Office Action Summary	Application No. 16/412,340	Applicant(s) Chasman et al.	
	Examiner OLEG KORSAK	Art Unit 2492	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 05/31/22.

☐ 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) 1-6 and 8-9 is/are pending in the application.

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

6) ☑ Claim(s) 1-6 is/are allowed.

7) ☑ Claim(s) 8-9 is/are rejected.

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

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

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

Application Papers

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

11)☐ The drawing(s) filed on _____ 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: _____.

DETAILED ACTION

Response to Amendment

This action is in response to amendment filed May 31, 2022 for the application # 16/412,340 filed on May 14, 2019. Claims 1-6, 8, and 9 are pending and are directed toward SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES.

Any claim objection/rejection not repeated below is withdrawn due to Applicant's amendment.

Notice of Pre-AIA or AIA Status

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

Response to Arguments

Applicant's arguments with regards to claims 1-6, 8, and 9 have been fully considered, they are persuasive in view of amended claims 1-6. No amendments and/or arguments were made in regards to claims 8 and 9, therefore Examiner maintains rejections of claims 8 and 9.

Priority

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant concedes that Bonomi's

effective filing date precedes the effective filing date of all claims, and Bonomi is therefore conceded to be prior art (REMARKS, page 5).

Claim Rejections - 35 USC § 102

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.

Claims 8 and 9 are rejected under 35 U.S.C. 102(a)(2) as being unpatentable over Bonomi et al. (US 2018/0115519, Pub. Date: Apr. 26, 2018, priority Oct. 21, 2016.), hereinafter referred to as Bonomi.

As per **claim 8**, Bonomi teaches a method for deployment of a midserver for ingestion of data into a cloud-based service from an external network (*The system architecture 100 supports security technology methods and algorithms that enable co-location of the IT/OT devices and other infrastructure components on the fognode 124 that enable operation of the IT and OT software components without interfering with other software components. It also enables a secure middleware infrastructure and communication bus for secure data exchange, as well as prevents inadvertent interference and Denial of Service (DOS) effects on the system components due to failures and defects in one set of software components that are co-located. In some embodiments the system architecture 100 prevents malicious Denial of Service (DOS) effects in the system architecture 100 components if vulnerabilities are present in a set of software components that are co-located with one another. Bonomi, [0056]*) wherein the external network

comprises a virtual network operated on a cloud computing service (*310- Executing virtual network functions within the virtual machines, Bonomi, FIG. 3*), comprising the steps of:

establishing on the cloud computing service a virtual network controlled by the cloud-based service (*FIG. 4 is a diagrammatic representation of an example machine in the form of a computer system 1, within which a set of instructions for causing the machine to perform any one or more of the methodologies discussed herein may be executed. In various example embodiments, the machine operates as a standalone device or may be connected (e.g., networked) to other machines. In a networked deployment, the machine may operate in the capacity of a server or a client machine in a server-client network environment or as a peer machine in a peer-to-peer (or distributed) network environment. Bonomi, [0085]*);

establishing a virtual machine on the virtual network controlled by the cloud-based service (*Initiating virtual machines for a plurality of domains, Bonomi, FIG. 3*);

configuring the virtual machine on the virtual network controlled by the cloud-based service as a virtual network peer of the external network (*A virtual local area network (VLAN) mechanism enables the connected devices D3 and D5 (or other group of devices in the OT and/or IT domains) to be accessible and managed only by a soft real-time function enabled virtual machine. VLANs are identifiers or tags present in a packet that enables any of the IT/OT switches to forward them to ports that are configured to accept only packets with the specified tag. This VLAN tagging ensures that only configured VMs receive packets with the associated tags. In one embodiment, multiple domains/networks are connected to a physical or virtual switch (such as IT switch C) and each network comprises its own VLAN. Bonomi, [0044]*);

streaming data from the external network to the virtual machine configured as a virtual network peer of the external network (*Policies for separating a device flow (I/0 of each device)*

into multiple streams of control, management, critical data and non-critical data flows is enabled through ovs-flows and policies. Bonomi, [0052]); and

forwarding the streamed data from the virtual network peer to the cloud-based service (*A forwarder 108 present in the forwarder VM 142 represents a set of docker containers that is used for forwarding messages received from the data bus 109 to appropriate cloud layer in a secure manner. Bonomi, [0076],* see also *Bonomi, [0084]*).

Claim 9 has limitations similar to those treated in the above rejection, and are met by the references as discussed above, and are rejected for the same reasons of anticipation as used above.

Allowable Subject Matter

Claims 1-6 are allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLEG KORSAK whose telephone number is (571)270-1938. The examiner can normally be reached on 5:00 AM- 4:00 PM.

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, SALEH NAJJAR can be reached on (571) 272-4006. 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.

/OLEG KORSAK/
Primary Examiner, Art Unit 2492

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/412,340	Chasman et al.
	Examiner	Art Unit
	OLEG KORSAK	2492

✓	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	05/01/2022	06/12/2022							
	1	✓	=							
	2	✓	=							
	3	✓	=							
	4	✓	=							
	5	✓	=							
	6	✓	=							
	7	✓	-							
	8	✓	✓							
	9	✓	✓							
	10	✓	-							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/412,340	Chasman et al.
	Examiner	Art Unit
	OLEG KORSAK	2492

CPC - Searched*		
Symbol	**Date**	**Examiner**
H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	05/01/2022	OK
H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	06/12/2022	OK

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**
H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	05/01/2022	OK
GOOGLE NPL search	05/01/2022	OK
search limited by keywords	05/01/2022	OK
H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	06/12/2022	OK
search limited by keywords	06/12/2022	OK

/OLEG KORSAK/ Primary Examiner, Art Unit 2492	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/412,340	Chasman et al.
	Examiner	Art Unit
	OLEG KORSAK	2492

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

/OLEG KORSAK/ Primary Examiner, Art Unit 2492	

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	22	("20090222562" OR "20140156806" OR "20140279762" OR "20150379424" OR "20160078361" OR "20170193110" OR "20120266244" OR "20150149979" OR "20150169294" OR "20160364307" OR "20170323089" OR "5669000" OR "20070021955" OR "20070043656" OR "20080221949" OR "20110208681" OR "20160092557" OR "7072863" OR "20080027690" OR "20120116743" OR "20150186427" OR "20160164905").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/30 01:12 PM
L2	50	((("QOMPLX") near3 ("Inc"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/04/30 01:12 PM
L3	499	((("CHASMAN") near3 ("Mike")) OR (("CHUNG") near3 ("Jeffrey")) OR (("CRABTREE") near3 ("Jason")) OR (("JURUKOVSKI") near3 ("Luka")) OR (("KELLEY") near3 ("Richard")) OR (("LUDWIG") near3 ("Andre")) OR (("PANASENKOV") near3 ("Artem")) OR (("SELLERS") near3 ("Andrew"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:13 PM
L4	1	(L2 OR L3) AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:14 PM
L5	187100	(H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:16 PM

		H04L63/0807 H04L63/1441 H04L67/104 H04L67/141).CPC.					
L6	0	L1 AND L5	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:16 PM
L7	160	L5 AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:17 PM
L8	0	L7 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:18 PM
L9	235	L5 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:18 PM
L10	2	L9 AND (cloud NEAR2 controller)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:19 PM
L11	22	("20090222562" OR "20140156806" OR "20140279762" OR "20150379424" OR "20160078361" OR "20170193110" OR "20120266244" OR "20150149979" OR "20150169294" OR "20160364307" OR "20170323089" OR "5669000" OR "20070021955" OR "20070043656" OR "20080221949" OR "20110208681" OR "20160092557" OR "7072863" OR "20080027690" OR "20120116743" OR "20150186427" OR "20160164905").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/06/12 08:22 AM
L12	54	((("QOMPLX") near3 ("Inc"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/06/12 08:22 AM
L13	504	((("CHASMAN") near3 ("Mike")) OR (("CHUNG") near3 ("Jeffrey")) OR (("CRABTREE") near3 ("Jason")) OR (("JURUKOVSKI") near3 ("Luka")) OR (("KELLEY") near3 ("Richard")) OR (("LUDWIG") near3 ("Andre")) OR	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM

		(("PANASENKOV") near3 ("Artem")) OR (("SELLERS") near3 ("Andrew"))).INV.					
L14	1	(L2 OR L3) AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L15	189935	(H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141).CPC.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L16	0	L1 AND L5	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L17	162	L5 AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L18	0	L7 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L19	256	L5 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L20	2	L9 AND (cloud NEAR2 controller)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/412,340	Filing Date 05/14/2019	☐ 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 $230 =	
☐ 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	07/27/2022	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 6	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 6	= 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".	/ZURIASHWORK ZENEBE/
*** 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.

PTO/SB/30EFS (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	16/412,340	Filing Date	2019-05-14	Docket Number (if applicable)	15026	Art Unit	2492
First Named Inventor	Mike Chasman			Examiner Name	Korask, Oleg		

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 _____

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

PTO/SB/30EFS (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.

Signature of Registered U.S. Patent Practitioner			
Signature	/BRIAN R. GALVIN/	Date (YYYY-MM-DD)	2022-07-20
Name	Brian R. Galvin	Registration Number	50966

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.

Electronic Patent Application Fee Transmittal

Application Number:	16412340
Filing Date:	14-May-2019
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Filer:	Brian Russell Galvin/Emma Walker
Attorney Docket Number:	15026

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

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

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
RCE- 1ST REQUEST	2801	1	680	680
		Total in USD ($)		**680**

Electronic Acknowledgement Receipt

EFS ID:	46284754
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Emma Walker
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	27-JUL-2022
Filing Date:	14-MAY-2019
Time Stamp:	15:03:59
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$680
RAM confirmation Number	E20227QF04311286
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	Request for Continued Examination (RCE)	220727_15026_RCE_1_AS_FILED.pdf	1681526 eda7edbaeb905dd9592731c6fbd4f0ddab4d882d	no	3
Warnings:					
Information:					
2	Response After Final Action	220727_15026_OAR_2_AS_FILED.pdf	87282 8947116668d30f41cf457a14a359692a807dd508	no	5
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	38228 831433629f81497994bef6c7203cd182b146c914	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1807036		

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit: 2492 Examiner: Korask, Oleg

In Re:	Mike Chasman et al.
Case:	15026
Serial No.:	16/412,340
Filed:	May 14, 2019
Subject:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICE

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

Dear Commissioner:

Response B

In the Claims

All of the claims standing for examination are reproduced below with appropriate status indication.

1. (Previously presented) A system for ingestion of data into a cloud-based service from an external network, comprising:

a midserver comprising at least a processor, a memory, and a plurality of programming instructions stored in the memory and operating on the processor, wherein the plurality of programming instructions, when operating on the processor, cause the processor to:

automatically install a virtual appliance software application, the virtual appliance software application configured to automatically load a plurality of stored configurations on the midserver;

establish a secure network connection to an external network;

receive data over a local network from a plurality of computing devices;

apply a plurality of transformations to at least a portion of the received data; and

retransmit the received data over the secure connection as a single data stream.

2. (Original) The system of claim 1, wherein the containerized services include one or more of the following types of containerized services: traffic processors, sensors, management services, and utilities.

3. (Original) The system of claim 1, wherein the midserver is installed at the same location from which some part of the external network is operated.

4. (Previously presented) A method for ingestion of data into a cloud-based service from an external network, comprising the steps of:

installing a midserver comprising at least a processor, a memory, and a plurality of programming instructions stored in the memory and operating on the processor;

automatically installing, using the midserver, a virtual appliance software application, the virtual appliance software application configured to automatically load a plurality of stored configurations on the midserver;

establishing a secure network connection from the midserver to an external network;

receiving data over a local network from a plurality of computing devices;

applying a plurality of transformations to at least a portion of the received data; and

retransmitting the received data over the secure connection as a single data stream.

5. (Previously presented) The method of claim 4, further comprising the step of including one or more of the following types of containerized services: traffic processors, sensors, management services, and utilities.

6. (Previously presented) The method of claim 4, further comprising the step of installing the midserver at the same location from which some part of the external network is operated.

7-10. (Canceled)

REMARKS

This communication is responsive to the office action pertaining to the instant invention that was mailed on June 16, 2022.

From the Action:

Claims 8 and 9 are rejected under 35 U.S.C. §102(a)(2) as being unpatentable over Bonomi et al. (US 2018/0115519, Pub. Date: Apr. 26, 2018, priority Oct. 21, 2016.), hereinafter referred to as Bonomi.

Applicant's Response:

Applicant has canceled Claims 8 and 9, eliminating the only non-allowed claims. Applicant therefore respectfully requests that the §102 rejections be withdrawn accordingly.

SUMMARY

As all of the claims (as amended) are believed to be, and to have been shown to be, patentable over the references cited, applicant respectfully requests that the case be passed quickly to issue. If any time extension is needed beyond any extension requested with this amendment, such extension is hereby requested.

Respectfully Submitted,

Mike Chasman

By: */BRIAN R. GALVIN/*

Brian R Galvin
Reg. No. 50,966

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2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383
(360) 674-6233
July 20, 2022

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

82318 7590 08/10/2022

Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

EXAMINER
KORSAK, OLEG

ART UNIT	PAPER NUMBER
2492	

DATE MAILED: 08/10/2022

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/412,340	05/14/2019	Mike Chasman	15026	7063

TITLE OF INVENTION: SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	11/10/2022

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. 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.

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 including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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

82318 7590 08/10/2022

Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

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.
16/412,340	05/14/2019	Mike Chasman	15026	7063

TITLE OF INVENTION: SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	11/10/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
KORSAK, OLEG	2492	703-021000

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) ❑ Advance Order - # of Copies _____

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

❑ Electronic Payment via 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

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/412,340	05/14/2019	Mike Chasman	15026	7063

82318 7590 08/10/2022

Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

EXAMINER	
KORSAK, OLEG	
ART UNIT	PAPER NUMBER
2492	

DATE MAILED: 08/10/2022

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

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

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

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

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

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

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 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. 16/412,340	Applicant(s) Chasman et al.	
	Examiner OLEG KORSAK	Art Unit 2492	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 07/27/2022.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3. ☑ The allowed claim(s) is/are 1-6 . 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 _____.

/OLEG KORSAK/
Primary Examiner, Art Unit 2492

Notice of Pre-AIA or AIA Status

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

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

DETAILED ACTION

A Request for Continued Examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 27, 2022 has been entered.

Claims 7-10 have been cancelled. Claims 1-6 are currently pending and directed toward SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES.

Any claim objection/rejection not repeated below is withdrawn due to Applicant's amendment.

Allowable Subject Matter

Claims 1-6 are allowed.

The following is an examiner's statement of reasons for allowance in view of Applicant's remarks in the response filed on July 27, 2022:

Applicant canceled claims 7-10. Claims 1-6 were previously allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLEG KORSAK whose telephone number is (571)270-1938. The examiner can normally be reached on Monday-Friday 7:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571)272-4006. 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.

/OLEG KORSAK/
Primary Examiner, Art Unit 2492

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/412,340	Chasman et al.
	Examiner	**Art Unit**
	OLEG KORSAK	2492

✓	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	05/01/2022	06/12/2022	08/05/2022						
1	1	✓	=	=						
2	2	✓	=	=						
3	3	✓	=	=						
4	4	✓	=	=						
5	5	✓	=	=						
6	6	✓	=	=						
	7	✓	-	-						
	8	✓	✓	-						
	9	✓	✓	-						
	10	✓	-	-						

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/412,340	Chasman et al.
	Examiner	**Art Unit**
	OLEG KORSAK	2492

CPC								
Symbol							**Type**	**Version**
H04L	/	63	/	0218			F	2013-01-01
H04L	/	63	/	0807			I	2013-01-01
H04L	/	63	/	1441			I	2013-01-01
H04L	/	63	/	0428			I	2013-01-01
G06F	/	8	/	61			I	2013-01-01
H04L	/	41	/	0806			I	2013-01-01
G06F	/	9	/	44505			I	2013-01-01
G06F	/	9	/	45533			I	2013-01-01
H04L	/	67	/	104			I	2013-01-01
H04L	/	67	/	141			I	2013-01-01
H04L	/	12	/	4641			I	2013-01-01
H04L	/	63	/	0272			I	2013-01-01
G06N	/	99	/	00			I	2013-01-01

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

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	6	
/OLEG KORSAK/ Primary Examiner, Art Unit 2492	05 August 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20220805

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/412,340	Chasman et al.
	Examiner	**Art Unit**
	OLEG KORSAK	2492

INTERNATIONAL CLASSIFICATION					
CLAIMED					
H04L9/40	/	9	/	40	
NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

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

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	6	
/OLEG KORSAK/ Primary Examiner, Art Unit 2492	05 August 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/412,340	Chasman et al.
	Examiner	**Art Unit**
	OLEG KORSAK	2492

☐ 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		10												
2	2														
3	3														
4	4														
5	5														
6	6														
	7														
	8														
	9														

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 6	
/OLEG KORSAK/ Primary Examiner, Art Unit 2492 (Primary Examiner)	05 August 2022 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/412,340	Chasman et al.
	Examiner	Art Unit
	OLEG KORSAK	2492

CPC - Searched*		
Symbol	**Date**	**Examiner**
H04L63/0218 G06F8/61 G06F9/44505 G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	05/01/2022	OK
H04L63/0218 G06F8/61 G06F9/44505 G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	06/12/2022	OK
H04L63/0218 G06F8/61 G06F9/44505 G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	08/05/2022	OK

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.

/OLEG KORSAK/ Primary Examiner, Art Unit 2492	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/412,340	Chasman et al.
	Examiner	Art Unit
	OLEG KORSAK	2492

Search Notes		
Search Notes	**Date**	**Examiner**
H04L63/0218 G06F8/61 G06F9/44505 G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	05/01/2022	OK
GOOGLE NPL search	05/01/2022	OK
search limited by keywords	05/01/2022	OK
H04L63/0218 G06F8/61 G06F9/44505 . G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	06/12/2022	OK
search limited by keywords	06/12/2022	OK
H04L63/0218 G06F8/61 G06F9/44505 G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141	08/05/2022	OK
search limited by keywords	08/05/2022	OK

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
H04L63	0218 0272 0428 0807 1441	08/05/2022	OK
G06F8	61	08/05/2022	OK
G06F9	44505 45533	08/05/2022	OK
G06N99	00	08/05/2022	OK
H04L12	4641	08/05/2022	OK
H04L41	0806	08/05/2022	OK
H04L67	104 141		

/OLEG KORSAK/ Primary Examiner, Art Unit 2492	

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	22	("20090222562" OR "20140156806" OR "20140279762" OR "20150379424" OR "20160078361" OR "20170193110" OR "20120266244" OR "20150149979" OR "20150169294" OR "20160364307" OR "20170323089" OR "5669000" OR "20070021955" OR "20070043656" OR "20080221949" OR "20110208681" OR "20160092557" OR "7072863" OR "20080027690" OR "20120116743" OR "20150186427" OR "20160164905").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/30 01:12 PM
L2	50	((("QOMPLX") near3 ("Inc"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/04/30 01:12 PM
L3	499	((("CHASMAN") near3 ("Mike")) OR (("CHUNG") near3 ("Jeffrey")) OR (("CRABTREE") near3 ("Jason")) OR (("JURUKOVSKI") near3 ("Luka")) OR (("KELLEY") near3 ("Richard")) OR (("LUDWIG") near3 ("Andre")) OR (("PANASENKOV") near3 ("Artem")) OR (("SELLERS") near3 ("Andrew"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:13 PM
L4	1	(L2 OR L3) AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:14 PM
L5	187100	(H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:16 PM

		H04L63/0807 H04L63/1441 H04L67/104 H04L67/141).CPC.					
L6	0	L1 AND L5	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:16 PM
L7	160	L5 AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:17 PM
L8	0	L7 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:18 PM
L9	235	L5 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:18 PM
L10	2	L9 AND (cloud NEAR2 controller)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/04/30 01:19 PM
L11	22	("20090222562" OR "20140156806" OR "20140279762" OR "20150379424" OR "20160078361" OR "20170193110" OR "20120266244" OR "20150149979" OR "20150169294" OR "20160364307" OR "20170323089" OR "5669000" OR "20070021955" OR "20070043656" OR "20080221949" OR "20110208681" OR "20160092557" OR "7072863" OR "20080027690" OR "20120116743" OR "20150186427" OR "20160164905").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2022/06/12 08:22 AM
L12	54	((("QOMPLX") near3 ("Inc"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/06/12 08:22 AM
L13	504	((("CHASMAN") near3 ("Mike")) OR (("CHUNG") near3 ("Jeffrey")) OR (("CRABTREE") near3 ("Jason")) OR (("JURUKOVSKI") near3 ("Luka")) OR (("KELLEY") near3 ("Richard")) OR (("LUDWIG") near3 ("Andre")) OR	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM

		(("PANASENKOV") near3 ("Artem")) OR (("SELLERS") near3 ("Andrew"))).INV.					
L14	1	(L2 OR L3) AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L15	189935	(H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141).CPC.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L16	0	L1 AND L5	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L17	162	L5 AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L18	0	L7 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L19	256	L5 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L20	2	L9 AND (cloud NEAR2 controller)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/06/12 08:22 AM
L21	22	("20090222562" OR "20140156806" OR "20140279762" OR "20150379424" OR "20160078361" OR "20170193110" OR "20120266244" OR "20150149979" OR "20150169294" OR "20160364307" OR "20170323089" OR "5669000" OR "20070021955" OR "20070043656" OR "20080221949" OR "20110208681" OR "20160092557" OR "7072863" OR "20080027690" OR "20120116743" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/08/05 10:49 AM

		"20150186427" OR "20160164905").pn.					
L22	55	((("QOMPLX") near3 ("Inc"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/08/05 10:49 AM
L23	514	((("CHASMAN") near3 ("Mike")) OR (("CHUNG") near3 ("Jeffrey")) OR (("CRABTREE") near3 ("Jason")) OR (("JURUKOVSKI") near3 ("Luka")) OR (("KELLEY") near3 ("Richard")) OR (("LUDWIG") near3 ("Andre")) OR (("PANASENKOV") near3 ("Artem")) OR (("SELLERS") near3 ("Andrew"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L24	1	(L2 OR L3) AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L25	192369	(H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141).CPC.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L26	0	L1 AND L5	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L27	171	L5 AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L28	0	L7 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L29	271	L5 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L30	2	L9 AND (cloud NEAR2 controller)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L31	22	("20090222562" OR "20140156806" OR "20140279762" OR "20150379424" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/08/05 10:49 AM

		"20160078361" OR "20170193110" OR "20120266244" OR "20150149979" OR "20150169294" OR "20160364307" OR "20170323089" OR "5669000" OR "20070021955" OR "20070043656" OR "20080221949" OR "20110208681" OR "20160092557" OR "7072863" OR "20080027690" OR "20120116743" OR "20150186427" OR "20160164905").pn.					
L32	55	((("QOMPLX") near3 ("Inc"))).AS,AANM.	(USPAT)	OR	ON	ON	2022/08/05 10:49 AM
L33	514	((("CHASMAN") near3 ("Mike")) OR (("CHUNG") near3 ("Jeffrey")) OR (("CRABTREE") near3 ("Jason")) OR (("JURUKOVSKI") near3 ("Luka")) OR (("KELLEY") near3 ("Richard")) OR (("LUDWIG") near3 ("Andre")) OR (("PANASENKOV") near3 ("Artem")) OR (("SELLERS") near3 ("Andrew"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L34	1	(L2 OR L3) AND ansible	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L35	192369	(H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141).CPC.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L36	0	L1 AND L5	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L37	171	L5 AND ansible	(US-PGPUB; USPAT;	OR	ON	ON	2022/08/05

			USOCR; EPO; JPO; DERWENT)				10:49 AM
L38	0	L7 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L39	271	L5 AND (fog ADJ computing)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L40	2	L9 AND (cloud NEAR2 controller)	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2022/08/05 10:49 AM
L41	4	N1 AND N3	(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	2022/08/05 10:53 AM

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N1	111113	(H04L63/0218 G06F8/61 G06F9/44505 Blank. G06F9/45533 G06N99/00 H04L12/4641 H04L41/0806 H04L63/0272 H04L63/0428 H04L63/0807 H04L63/1441 H04L67/104 H04L67/141).CPC.	(US-PGPUB; USPAT)	OR	ON	ON	2022/08/05 10:51 AM
N2	0	(midserver AND transformation AND ansible AND virtual).CLM.	(US-PGPUB; USPAT)	OR	ON	ON	2022/08/05 10:53 AM
N3	2	(transformation AND ansible AND virtual).CLM.	(US-PGPUB; USPAT)	OR	ON	ON	2022/08/05 10:53 AM
N4	2	N1 AND N3	(US-PGPUB; USPAT)	OR	ON	ON	2022/08/05 10:53 AM
N5	0	N4 AND (single ADJ	(US-PGPUB; USPAT)	OR	ON	ON	2022/08/05

		stream).CLM.					10:55 AM

Doc Code: R48.REQ
Document Description: Request under Rule 48 correcting inventorship

PTO/AIA/40 (04-18)
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.

REQUEST FOR CORRECTION IN A PATENT APPLICATION RELATING TO INVENTORSHIP OR AN INVENTOR NAME, OR ORDER OF NAMES, OTHER THAN IN A REISSUE APPLICATION (37 CFR 1.48)

Application Number	16/412,340
Filing Date	5/14/2019
First Named Inventor	Mike Chasman
Art Unit	2492
Examiner Name	Korsak, Oleg
Practitioner Docket Number	15026

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

Applicant hereby **requests that the inventorship be corrected or changed, or that the name of the inventor or a joint inventor, or the order of the names of joint inventors, be changed,** in the above-identified application. **Note**: 37 CFR 1.48 applies to any request to correct inventorship filed on or after September 16, 2012, regardless of the application filing date. **Do not submit this form after payment of the issue fee or if the application has been patented.** See 37 CFR 1.324 for correction of inventorship in a patent.

Please check the applicable box(es) below.

For a nonprovisional application:

☒ 1. This request is to correct or change the inventorship in a **nonprovisional** application (**under 37 CFR 1.48(a)**) and includes:

☒ An application data sheet (ADS) in accordance with 37 CFR 1.76(c) with the corrected or updated information shown with markings (*e.g.*, underlining for insertions, strikethrough for deletions). See the Manual of Patent Examining Procedure (MPEP) section 601.05(a) for information about filing an ADS in an application filed on/after September 16, 2012. For information about filing a Supplemental ADS in an application filed before September 16, 2012, see MPEP 601.05(b).

☒ The processing fee set forth in 37 CFR 1.17(i). $ 320

☐ An inventor is being added. An inventor's oath or declaration by any actual inventor who has not yet executed an oath or declaration is required (see 37 CFR 1.48(b)). See MPEP 602.01(a) for information about an inventor's oath or declaration for an application filed on/after September 16, 2012 (*e.g.*, form **PTO/AIA/01**). For information about an inventor's oath or declaration for an application filed before September 16, 2012 (*e.g.*, form **PTO/SB/01**), see MPEP 602.01(b).

☒ This request is being filed after the first Office action on the merits has been given or mailed (see 37 CFR 1.48(c) and 1.17(d)). Check one of the following:

☒ This request to correct or change the inventorship is due solely to the cancellation of claims in the application.

OR

☐ The fee set forth in 37 CFR 1.17(d) is due (in addition to the fee set forth in 37 CFR 1.17(i)). $ _____

This collection of information is required by 37 CFR 1.48. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 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.**

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

PTO/AIA/40 (04-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
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REQUEST FOR CORRECTION IN A PATENT APPLICATION RELATING TO INVENTORSHIP OR AN INVENTOR NAME, OR ORDER OF NAMES, OTHER THAN IN A REISSUE APPLICATION (37 CFR 1.48)

☐ 2. This request is to correct or update the name of the inventor or a joint inventor, or the order of names of joint inventors, in a **nonprovisional** application (**under 37 CFR 1.48(f)**) and includes:

☐ An application data sheet in accordance with 37 CFR 1.76(c) identifying the complete inventive entity, including the corrected or updated name of the inventor, or the new order of names shown with markings (*e.g.*, underlining for insertions, strikethrough for deletions). See the MPEP 601.05(a) for information about filing an ADS in an application filed on/after September 16, 2012. For information about filing a Supplemental ADS in an application filed before September 16, 2012, see MPEP 601.05(b).

☐ The processing fee set forth in 37 CFR 1.17(i). $ _____

For a provisional application:

☐ This request is to change or correct the inventorship, or correct or update the name of the inventor or a joint inventor, in a **provisional** application (**under 37 CFR 1.48(d)**) and includes:

☐ **Attached hereto** is a document that is signed by a party set forth in 37 CFR 1.33(b) and identifies each inventor by his or her legal name, in the preferred order. Note: the document may be an application data sheet in accordance with 37 CFR 1.76(c) that identifies the changes with markings (underlining for insertions, strikethrough for deletions).

☐ The processing fee set forth in 37 CFR 1.17(q). $ _____

Fee Payment Information:

■ Applicant asserts small entity status. See 37 CFR 1.27.

☐ Applicant certifies micro entity status. See 37 CFR 1.29.
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously

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

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

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

■ Payment made via EFS-Web.

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

I am the

☐ Applicant*

■ attorney or agent of record
Registration number 50966

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

Signature /BRIAN R. GALVIN/

Typed or printed name Brian R. Galvin

Date 9/16/2022

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, 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 1 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.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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
	Mike		Chasman	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Herndon	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	478 Elden Street
Address 2	Unit 122

City	Herndon	State/Province	VA
Postal Code	20170	Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jeffrey		Chung	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	12001 Market Street
Address 2	Apt. 281

City	Reston	State/Province	VA
Postal Code	20190	Country	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jason		Crabtree	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

City	Vienna	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	10208 Westford Drive		
Address 2			
City	Vienna	State/Province	VA
Postal Code	22182	Country	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Luka		Jurukovski	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Arlington	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	700 N Randolph St.		
Address 2	Apt. 1500		
City	Arlington	State/Province	VA
Postal Code	22203	Country	US

Inventor 5 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Richard		Kelley	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Woodbridge	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	12904 Valleywood Dr		
Address 2			
City	Woodbridge	State/Province	VA
Postal Code	22192	Country	US

Inventor 6 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andre		Ludwig	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Mailing Address of Inventor:

~~Address 1~~	~~11091 Sunset Hill Road~~		
~~Address 2~~	~~Suite 210~~		
~~City~~	~~Reston~~	~~State/Province~~	~~VA~~
~~Postal Code~~	~~20190~~	~~Country~~	~~US~~

Inventor 7 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Artem		Panasenkov	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Reston	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	1681 Cedar Hollow Way		
Address 2			
City	Reston	**State/Province**	VA
Postal Code	20194	**Country**	US

Inventor 8 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andrew		Sellers	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Monument	State/Province	CO	Country of Residence	US

Mailing Address of Inventor:

Address 1	16258 Windsor Creek Dr.		
Address 2			
City	Monument	**State/Province**	CO
Postal Code	80132	**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	82318

PTO/AIA/14 (01-22)
Approved for use through 05/31/2024. 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	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Email Address	USPTO@galvinpatentlaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES		
Attorney Docket Number	15026	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	18	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	82318		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16412340	Continuation in part of	16267893	2019-02-05
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16267893	Continuation in part of	16248133	2019-01-15
Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16248133	Continuation in part of	15849901	2017-12-21	11023284	2021-06-01
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15849901	Continuation in part of	15835436	2017-12-07	10572828	2020-02-25
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15835436	Continuation in part of	15790457	2017-10-23	10884999	2021-01-05
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15790457	Continuation in part of	15790327	2017-10-23	10860951	2020-12-08

Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15790327	Claims benefit of provisional	62568291	2017-10-04
Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15790327	Continuation in part of	15616427	2017-06-07

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15616427	Continuation in part of	14925974	2015-10-28

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15790327	Continuation in part of	15141752	2016-04-28	10860962	2020-12-08

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15141752	Continuation in part of	15091563	2016-04-05	10204147	2019-02-12

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15141752	Continuation in part of	14986536	2015-12-31	10210255	2019-02-19

Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15141752	Continuation in part of	14925974	2015-10-28

Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15790457	Claims benefit of provisional	62568298	2017-10-04

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15849901	Continuation in part of	15835312	2017-12-07	11055451	2021-07-06

Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15835312	Continuation in part of	15186453	2016-06-18

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15186453	Continuation in part of	15166158	2016-05-26

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15166158	Continuation in part of	15141752	2016-04-28	10860962	2020-12-08

Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16248133	Continuation in part of	15813097	2017-11-14

Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15813097	Continuation in part of	15616427	2017-06-07

Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16248133	Continuation in part of	15806697	2017-11-08

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15806697	Continuation in part of	15376657	2016-12-13	10402906	2019-09-03

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15376657	Continuation in part of	15237625	2016-08-15	10248910	2019-04-02

Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15237625	Continuation in part of	15206195	2016-07-08

Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15206195	Continuation in part of	15186453	2016-06-18

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15806697	Continuation in part of	15343209	2016-11-04

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15343209	Continuation in part of	15237625	2016-08-15	10248910	2019-04-02
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15343209	Continuation in part of	15229476	2016-08-05	10454791	2019-10-22
Prior Application Status	Abandoned				Remove
Application Number	Continuity Type	Prior Application Number			Filing or 371(c) Date (YYYY-MM-DD)
15229476	Continuation in part of	15206195			2016-07-08
Prior Application Status	Abandoned				Remove
Application Number	Continuity Type	Prior Application Number			Filing or 371(c) Date (YYYY-MM-DD)
16248133	Continuation in part of	15673368			2017-08-09
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15673368	Continuation in part of	15376657	2016-12-13	10402906	2019-09-03

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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.

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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	QOMPLX, Inc.		
Mailing Address Information For Applicant:			
Address 1	1775 Tysons Blvd., Suite 800		
Address 2			
City	Tysons	**State/Province**	VA
Country	US	Postal Code	22102
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 (01-22)
Approved for use through 05/31/2024. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country		Postal Code	
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	/BRIAN R. GALVIN/			Date (YYYY-MM-DD)	2022-09-16
First Name	Brian	Last Name	Galvin	Registration Number	50966

Additional Signature may be generated within this form by selecting the Add button.

PTO/AIA/14 (01-22)
Approved for use through 05/31/2024. 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	15026
	Application Number	16/412,340
Title of Invention	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES	

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 Patent Application Fee Transmittal

Application Number:	16412340
Filing Date:	14-May-2019
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Filer:	Brian Russell Galvin/Emma Walker
Attorney Docket Number:	15026

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

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

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
CORRECTION OF INVENTORSHIP ON MERITS	2819	1	320	320
		Total in USD ($)		**320**

Electronic Acknowledgement Receipt

EFS ID:	46639694
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Emma Walker
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	19-SEP-2022
Filing Date:	14-MAY-2019
Time Stamp:	04:52:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$320
RAM confirmation Number	E20229I553111909
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	Request under Rule 48 correcting inventorship	220919_15026_Revised_Inventorship_AS_FILED.pdf	83118 29e024cafa5c0042f6b320dc1c62607644d22d28	no	3
Warnings:					
Information:					
2	Application Data Sheet	220919_15026_Revised_ADS_2_AS_FILED.pdf	111574 bf5de98400ea74cae04ee558c3663251fdb96acc	no	14
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
3	Fee Worksheet (SB06)	fee-info.pdf	37970 f6e7f30d801a9faee32766e14dd82931fad97ccc	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	232662		

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), 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 including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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

82318 7590 08/10/2022

Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

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.
16/412,340	05/14/2019	Mike Chasman	15026	7063

TITLE OF INVENTION: SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	11/10/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
KORSAK, OLEG	2492	703-021000

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 Galvin Patent Law LLC
2 Brian R. Galvin
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: QOMPLX, INC.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): TYSONS, VIRGINIA

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) ☐ Advance Order - # of Copies _____

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

☒ Electronic Payment via 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

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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

Authorized Signature /BRIAN R. GALVIN/ Date October 4, 2022

Typed or printed name Brian R. Galvin Registration No. 50966

Electronic Patent Application Fee Transmittal

Application Number:	16412340
Filing Date:	14-May-2019
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Filer:	Brian Russell Galvin/Mary Marston
Attorney Docket Number:	15026

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	600	600

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**600**

Electronic Acknowledgement Receipt

EFS ID:	46999617
Application Number:	16412340
International Application Number:	
Confirmation Number:	7063
Title of Invention:	SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES
First Named Inventor/Applicant Name:	Mike Chasman
Customer Number:	82318
Filer:	Brian Russell Galvin/Mary Marston
Filer Authorized By:	Brian Russell Galvin
Attorney Docket Number:	15026
Receipt Date:	10-NOV-2022
Filing Date:	14-MAY-2019
Time Stamp:	13:03:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$600
RAM confirmation Number	E2022A0D04043701
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	Issue Fee Payment (PTO-85B)	221110_15026_Issue_Fee_Form_SIGNED.pdf	1281185 10a1ff97acfc1a6eb41ee0235d37195520fd7479	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	37836 2535d21bfa4081b6ff7148112fdf7a3c17af7fe4	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1319021		

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
Office of the Chief Financial Officer

Document Code:WFEE

User :My-Hoa Nguyen

Sale Accounting Date:11/22/2022

Sale Item Reference Number	Effective Date
16412340	09/19/2022

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I2022AL756463548	2830	PROCESSING FEE, EXCEPT PROV. APPLS.	$70.00	Salea

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
16/412,340	05/14/2019	2492	1555	15026	10	6

CONFIRMATION NO. 7063

UPDATED FILING RECEIPT

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

OC000000136341540

Date Mailed: 11/25/2022

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)

Mike Chasman, Herndon, VA;
Jeffrey Chung, Reston, VA;
Jason Crabtree, Vienna, VA;
Luka Jurukovski, Arlington, VA;
Richard Kelley, Woodbridge, VA;
Artem Panasenkov, Reston, VA;
Andrew Sellers, Monument, CO;

Applicant(s)

QOMPLX, Inc., Tysons, VA;

Power of Attorney: The patent practitioners associated with Customer Number 82318

Domestic Priority data as claimed by applicant

This application is a CIP of 16/267,893 02/05/2019 ABN
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/813,097 11/14/2017 ABN
which is a CIP of 15/616,427 06/07/2017 ABN
which is a CIP of 14/925,974 10/28/2015 ABN
This application 16/412,340
is a CIP of 16/267,893 02/05/2019 ABN
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017 ABN
which is a CIP of 15/376,657 12/13/2016 PAT 10402906

which is a CIP of 15/237,625 08/15/2016 PAT 10248910
which is a CIP of 15/206,195 07/08/2016 ABN
which is a CIP of 15/186,453 06/18/2016 ABN
which is a CIP of 15/166,158 05/26/2016 ABN
which is a CIP of 15/141,752 04/28/2016 PAT 10860962
which is a CIP of 15/091,563 04/05/2016 PAT 10204147
and is a CIP of 14/986,536 12/31/2015 PAT 10210255
and is a CIP of 14/925,974 10/28/2015 ABN
This application 16/412,340
is a CIP of 16/267,893 02/05/2019 ABN
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/806,697 11/08/2017 ABN
which is a CIP of 15/343,209 11/04/2016 PAT 11087403
which is a CIP of 15/237,625 08/15/2016 PAT 10248910
and is a CIP of 15/229,476 08/05/2016 PAT 10454791
which is a CIP of 15/206,195 07/08/2016 ABN
This application 16/412,340
is a CIP of 16/267,893 02/05/2019 ABN
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/673,368 08/09/2017 ABN
which is a CIP of 15/376,657 12/13/2016 PAT 10402906
This application 16/412,340
is a CIP of 16/267,893 02/05/2019 ABN
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017 PAT 11023284
which is a CIP of 15/835,312 12/07/2017 PAT 11055451
which is a CIP of 15/186,453 06/18/2016 ABN
This application 16/412,340
is a CIP of 16/267,893 02/05/2019 ABN
which is a CIP of 16/248,133 01/15/2019
which is a CIP of 15/849,901 12/21/2017 PAT 11023284
which is a CIP of 15/835,436 12/07/2017 PAT 10572828
which is a CIP of 15/790,457 10/23/2017 PAT 10884999
which claims benefit of 62/568,298 10/04/2017
and is a CIP of 15/790,327 10/23/2017 PAT 10860951
which claims benefit of 62/568,291 10/04/2017
and is a CIP of 15/616,427 06/07/2017 ABN
and is a CIP of 15/141,752 04/28/2016 PAT 10860962

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: Not Applicable

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEM AND METHOD FOR MIDSERVER FACILITATION OF LONG-HAUL TRANSPORT OF TELEMETRY FOR CLOUD-BASED SERVICES

Preliminary Class

703

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

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

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

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

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

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

NOT GRANTED

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

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

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
16/412,340	05/14/2019	Mike Chasman	15026

CONFIRMATION NO. 7063

82318
Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

37 CFR 1.48 ACKNOWLEDGEMENT LETTER

OC000000136341541

Date Mailed: 11/25/2022

NOTICE OF ACCEPTANCE OF REQUEST UNDER 37 CFR 1.48(a)

This is in response to the applicant's request under 37 CFR 1.48(a) submitted on 09/19/2022.

The request under 37 CFR 1.48(a) 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 NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/412,340	12/27/2022	11539663	15026	7063

82318 7590 12/07/2022

Brian R. Galvin
Galvin Patent Law LLC
2916 NW Bucklin Hill Road
Suite 485
Silverdale, WA 98383

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

The Patent Term Adjustment is 802 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

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

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

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

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

Mike Chasman, Herndon, VA;
Jeffrey Chung, Reston, VA;
Jason Crabtree, Vienna, VA;
Luka Jurukovski, Arlington, VA;
Richard Kelley, Woodbridge, VA;

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

QOMPLX, Inc., Tysons, VA;

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.

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ACKNOWLEDGEMENT OF LOSS OF ENTITLEMENT TO ENTITY STATUS DISCOUNT

APPLICATION #	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET #	REQUEST ID
16/412,340	05/14/2019	Mike Chasman	15026	114873

The entity status change request below filed through Patent Center on 10/06/2023 has been accepted.

Certifications

APPLICANT CHANGING TO REGULAR UNDISCOUNTED FEE STATUS

Signature

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

Signature	Name	Registration #
/BRIAN R. GALVIN/	Brian Galvin	50966