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

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/387,988	06/07/2022	11354179	SVIPGP061J	8451

92045 7590 05/18/2022
The Caldwell Firm, LLC
PO Box 59655
Dept. SVIPGP
Dallas, TX 75229

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

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

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

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

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

Axel Fuchs, Richmond, CA;
Scott Sturges Andrews, Petaluma, CA;

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

Stragent LLC, Longview, TX;

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.

IR103 (Rev. 10/09)

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)

92045 7590 04/20/2022
The Caldwell Firm, LLC
PO Box 59655
Dept. SVIPGP
Dallas, TX 75229

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

Certificate of Mailing or Transmission

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

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/387,988	07/28/2021	Axel Fuchs	SVIPGP061J	8451

TITLE OF INVENTION: SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREY. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	07/20/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
ANYA, CHARLES E	2194	719-313000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

0 Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

0 "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 Patrick E. Caldwell, Esq.

2 The Caldwell Firm, LLC

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)

Stragent, LLC

Longview TX

Please check the appropriate assignee category or categories (will not be printed on the patent) : 0 Individual ☒ Corporation or other private group entity 0 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 0 Enclosed check 0 Non-electronic payment by credit card (Attach form PTO-2038)

0 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)

0 Applicant certifying micro entity status. See 37 CFR 1.29

0 Applicant asserting small entity status. See 37 CFR 1.27

0 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 /Patrick Caldwell/

Date 18 Apr 2022

Typed or printed name Patrick Caldwell

Registration No. 44,580

Electronic Patent Application Fee Transmittal				
Application Number:		17387988		
Filing Date:		28-Jul-2021		
Title of Invention:		SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		
First Named Inventor/Applicant Name:		Axel Fuchs		
Filer:		Patrick Edgar Caldwell		
Attorney Docket Number:		SVIPGP061J		
Filed as Large 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	1501	1	1200	1200

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1200

Electronic Acknowledgement Receipt	
EFS ID:	45592501
Application Number:	17387988
International Application Number:	
Confirmation Number:	8451
Title of Invention:	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK
First Named Inventor/Applicant Name:	Axel Fuchs
Customer Number:	92045
Filer:	Patrick Edgar Caldwell
Filer Authorized By:	
Attorney Docket Number:	SVIPGP061J
Receipt Date:	28-APR-2022
Filing Date:	28-JUL-2021
Time Stamp:	21:06:48
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$1200
RAM confirmation Number	E20224RL07152773
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)	SVIPGP061J_fee-transmittal_vF_28-Apr-2022.pdf	103117	no	1
			480074c40536f141bd88b01970fdc8b47807d22		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	38252	no	2
			f545a6809f213c61e521917fb566c7f2afe77595		
Warnings:					
Information:					
Total Files Size (in bytes):			141369		
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 DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

92045 7590 04/20/2022
The Caldwell Firm, LLC
PO Box 59655
Dept. SVIPGP
Dallas, TX 75229

EXAMINER

ANYA, CHARLES E

ART UNIT

PAPER NUMBER

2194

DATE MAILED: 04/20/2022

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/387,988	07/28/2021	Axel Fuchs	SVIPGP061J	8451

TITLE OF INVENTION: SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	07/20/2022

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

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

92045 7590 04/20/2022
The Caldwell Firm, LLC
PO Box 59655
Dept. SVIPGP
Dallas, TX 75229

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Certificate of Mailing or Transmission

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/387,988	07/28/2021	Axel Fuchs	SVIPGP061J	8451

TITLE OF INVENTION: SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK

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nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	07/20/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
ANYA, CHARLES E	2194	719-313000

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.

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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.
17/387,988	07/28/2021	Axel Fuchs	SVIPGP061J	8451
92045	7590	04/20/2022	EXAMINER	
The Caldwell Firm, LLC PO Box 59655 Dept. SVIPGP Dallas, TX 75229			ANYA, CHARLES E	
			ART UNIT	PAPER NUMBER
			2194	
DATE MAILED: 04/20/2022				

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. 17/387,988	Applicant(s) Fuchs et al.	
	Examiner CHARLES E ANYA	Art Unit 2194	AIA (FITF) Status No

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

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

1. ☒ This communication is responsive to 03/11/22.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3. ☒ The allowed claim(s) is/are See Continuation Sheet. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov**.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

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

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

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

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date <u>12/09/21</u> . 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 _____.
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/CHARLES E ANYA/ Primary Examiner, Art Unit 2194	
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Continuation of 3. The allowed claim(s) is/are: 31-49 and 51-58: Now renumbered as 1-27

<i>Search Notes</i> 	Application/Control No. 17/387,988	Applicant(s)/Patent Under Reexamination Fuchs et al.
	Examiner CHARLES E ANYA	Art Unit 2194

CPC - Searched*		
Symbol	Date	Examiner
WEST (G06F9/542 G06F9/545 G06F9/546 H04L43/10 H04L67/10 B60R16/0231)	04/05/2022	ca

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
The group/subgroup search is limited by text search	11/19/2021	ca
Inventor Search	11/19/2021	ca
IP.Com Search	11/19/2021	ca
Google Scholar Search	11/19/2021	ca
WEST (G06F9/542 G06F9/545 G06F9/546 H04L43/10 H04L67/10 B60R16/0231)	11/19/2021	ca
IDS considered	04/05/2022	ca

/CHARLES E ANYA/ Primary Examiner, Art Unit 2194	
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<i>Search Notes</i> 	Application/Control No. 17/387,988	Applicant(s)/Patent Under Reexamination Fuchs et al.
	Examiner CHARLES E ANYA	Art Unit 2194

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
WEST (G06F9/ 542 G06F9/ 545 G06F9/ 546 H04L43/ 10 H04L67/10 B60R16/0231)		04/05/2022	ca

/CHARLES E ANYA/ Primary Examiner, Art Unit 2194	
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Issue Classification 	Application/Control No. 17/387,988	Applicant(s)/Patent Under Reexamination Fuchs et al.
	Examiner CHARLES E ANYA	Art Unit 2194

CPC						
Symbol				Type	Version	
G06F	/	9	/	546	F	2013-01-01
G06F	/	9	/	542	I	2013-01-01
G06F	/	9	/	545	I	2013-01-01
G06F	/	9	/	54	I	2013-01-01
H04L	/	43	/	04	I	2013-01-01
H04L	/	43	/	06	I	2013-01-01
H04L	/	43	/	08	I	2013-01-01
H04L	/	67	/	02	I	2013-01-01
H04L	/	67	/	12	I	2013-01-01
B60R	/	16	/	0231	I	2013-01-01
H04L	/	43	/	10	I	2013-01-01
H04L	/	67	/	10	I	2013-01-01
G06F	/	2209	/	547	A	2013-01-01
H04L	/	65	/	102	A	2013-01-01

CPC Combination Sets						
Symbol			Type	Set	Ranking	Version
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NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	27	
/CHARLES E ANYA/ Primary Examiner, Art Unit 2194	05 April 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	11

U.S. Patent and Trademark Office

Part of Paper No.: 20220405

Issue Classification 	Application/Control No. 17/387,988	Applicant(s)/Patent Under Reexamination Fuchs et al.	
	Examiner CHARLES E ANYA	Art Unit 2194	

INTERNATIONAL CLASSIFICATION			
CLAIMED			
G06F9/54	/	9	/ 54
H04L43/04	/	43	/ 04
H04L43/06	/	43	/ 06
H04L43/08	/	43	/ 08
H04L67/02	/	67	/ 02
H04L67/12	/	67	/ 12
B60R16/023	/	16	/ 023
H04L43/10	/	43	/ 10
H04L67/10	/	67	/ 10
H04L65/102	/	65	/ 102
NON-CLAIMED			
	/		/

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
CROSS REFERENCES(S)	
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)

NONE (Assistant Examiner) (Date)		Total Claims Allowed: 27	
/CHARLES E ANYA/ Primary Examiner, Art Unit 2194 (Primary Examiner) (Date)		O.G. Print Claim(s) 1	O.G. Print Figure 11

Issue Classification 	Application/Control No. 17/387,988	Applicant(s)/Patent Under Reexamination Fuchs et al.
	Examiner CHARLES E ANYA	Art Unit 2194

☐ 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
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	4		13		22	1	31	11	40	20	49	7	58		
	5		14		23	2	32	12	41		50				
	6		15		24	3	33	13	42	21	51				
	7		16		25	4	34	14	43	22	52				
	8		17		26	5	35	15	44	23	53				
	9		18		27	6	36	16	45	24	54				

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 27	
/CHARLES E ANYA/ Primary Examiner, Art Unit 2194 (Primary Examiner) _____ (Date) 05 April 2022		O.G. Print Claim(s) 1	O.G. Print Figure 11

U.S. Patent and Trademark Office

Part of Paper No.: 20220405

Freeform Search

Database:

US Patents Full-Text Database

Search Type: ☐ Prior Art ☒ Interference

Term:

L152 and @ad<20021217

Recall Text

Display:

10

Documents in Display Format:

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Starting with Number

1

Order By:

☒ Date ☐ Hits

Generate:

☐ Hit List ☒ Hit Count ☐ Side by Side ☐ Image

Search

Clear

Interrupt

Search History

DATE: Tuesday, April 05, 2022

[Purge Queries](#)[Printable Copy](#)[Create Case](#)

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Interference Searches

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Date	L153	L152 and @ad<20021217	12	L153	L153	L153
Date	L152	L151 and 1142	219	L152	L152	L152
Date	L151	(shared or common) near memory with availab\$6	3320	L151	L151	L151
Date	L150	L149 and 1142	0	L150	L150	L150
Date	L149	(acu automotive adj control adj unit) with (request\$3 call invocation invok\$3 query\$3 message) with resource	17	L149	L149	L149

Date	<u>L148</u>	L147 and @ad<20021217	44	<u>L148</u>	<u>L148</u>	<u>L148</u>
Date	<u>L147</u>	L146 and l142	1120	<u>L147</u>	<u>L147</u>	<u>L147</u>
Date	<u>L146</u>	(request\$3 call invocation invok\$3 query\$3 message) with (bb or bulletin adj board or storage) with availab\$6	20028	<u>L146</u>	<u>L146</u>	<u>L146</u>
Date	<u>L145</u>	L144 and @ad<20021217	0	<u>L145</u>	<u>L145</u>	<u>L145</u>
Date	<u>L144</u>	L143 and l142	6	<u>L144</u>	<u>L144</u>	<u>L144</u>
Date	<u>L143</u>	((request or message or query) and (storage near availab\$6)).ab,ti.	163	<u>L143</u>	<u>L143</u>	<u>L143</u>
Date	<u>L142</u>	((((((((((G06F9/542)))))))))) ((((((((G06F9/545)))))))) ((((((((G06F9/546)))))))) ((((((((H04L43/10)))))))) ((((((((H04L67/10)))))))) ((((((((B60R16/0231))))))))).cpc.	36313	<u>L142</u>	<u>L142</u>	<u>L142</u>

Prior Art Searches

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Date	<u>L141</u>	L140 and @ad<20021217	7	<u>L141</u>	<u>L141</u>	<u>L141</u>
Date	<u>L140</u>	L137 and (request\$3 or messag\$3 or (shared or common) near memory) with (storing or sav\$3)	15	<u>L140</u>	<u>L140</u>	<u>L140</u>
Date	<u>L139</u>	L137 and (request or message or query) with (storage near availab\$6)	0	<u>L139</u>	<u>L139</u>	<u>L139</u>
Date	<u>L138</u>	L137 and ((request or message or query) and (storage near availab\$6)).ab,ti.	0	<u>L138</u>	<u>L138</u>	<u>L138</u>
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	<u>L136</u>	L135 and (request\$3 call invocation invok\$3 query\$3 message availab\$6) with (storage)	26	<u>L136</u>	<u>L136</u>	<u>L136</u>
	<u>L135</u>	L134 and @ad<20021217	223	<u>L135</u>	<u>L135</u>	<u>L135</u>
	<u>L134</u>	(electronic adj control adj unit ECU) with storage with sensor	4567	<u>L134</u>	<u>L134</u>	<u>L134</u>
	<u>L133</u>	L132 and @ad<20021217	165	<u>L133</u>	<u>L133</u>	<u>L133</u>

<u>L132</u>	L131 and (motor or vehicle or automobile or automotive or ecu)	4276	<u>L132</u>	<u>L132</u>	<u>L132</u>
<u>L131</u>	storage with (request\$3 message) with sensor	7865	<u>L131</u>	<u>L131</u>	<u>L131</u>
<u>L130</u>	L129 and @ad<20021217	240	<u>L130</u>	<u>L130</u>	<u>L130</u>
<u>L129</u>	L128 and (motor or vehicle or automobile or automotive or ecu)	3926	<u>L129</u>	<u>L129</u>	<u>L129</u>
<u>L128</u>	(bb or bulletin adj board or storage) with availab\$6 with sensor	5730	<u>L128</u>	<u>L128</u>	<u>L128</u>
<u>L127</u>	L126 and @ad<20021217	15	<u>L127</u>	<u>L127</u>	<u>L127</u>
<u>L126</u>	L125 and L122	1187	<u>L126</u>	<u>L126</u>	<u>L126</u>
<u>L125</u>	(request\$3 call invocation invok\$3 query\$3 message) with (bb or bulletin adj board or storage) with availab\$6	41435	<u>L125</u>	<u>L125</u>	<u>L125</u>
<u>L124</u>	L123 and (acu automotive adj control adj unit)	4	<u>L124</u>	<u>L124</u>	<u>L124</u>
<u>L123</u>	(request\$3 call invocation invok\$3 query\$3 message) with (sensor with resource)	3426	<u>L123</u>	<u>L123</u>	<u>L123</u>
<u>L122</u>	(request\$3 call invocation invok\$3 query\$3 message) with (sensor and resource)	18624	<u>L122</u>	<u>L122</u>	<u>L122</u>
<u>L121</u>	L120 and (request\$3 call invocation invok\$3 query\$3 message) with resource	0	<u>L121</u>	<u>L121</u>	<u>L121</u>
<u>L120</u>	(L119 L118) and @ad<20021217	32	<u>L120</u>	<u>L120</u>	<u>L120</u>
<u>L119</u>	("10002036" "10031790" "10248477" "7802263" "8209705" "8566843" "9575817" "9705765").PN.	39	<u>L119</u>	<u>L119</u>	<u>L119</u>
<u>L118</u>	("20030040881" "20030043739" "4099255" "6434459").PN.	10	<u>L118</u>	<u>L118</u>	<u>L118</u>
<u>L117</u>	L116 and @ad<20021217	12	<u>L117</u>	<u>L117</u>	<u>L117</u>
<u>L116</u>	(acu automotive adj control adj unit) with (request\$3 call invocation invok\$3 query\$3 message) with resource	39	<u>L116</u>	<u>L116</u>	<u>L116</u>
<u>L115</u>	L114 and @ad<20021217	36	<u>L115</u>	<u>L115</u>	<u>L115</u>
<u>L114</u>	(acu automotive adj control adj unit) with sensor	439	<u>L114</u>	<u>L114</u>	<u>L114</u>
<u>L113</u>	L112 and @ad<20021217	6	<u>L113</u>	<u>L113</u>	<u>L113</u>
<u>L112</u>	L108 and (shared or common) near memory with (request\$3 or memory or access\$3)	6	<u>L112</u>	<u>L112</u>	<u>L112</u>
<u>L111</u>	L108 and (bb or bulletin adj board or storage) with availab\$6	1	<u>L111</u>	<u>L111</u>	<u>L111</u>
<u>L110</u>	L109 and @ad<20021217	16	<u>L110</u>	<u>L110</u>	<u>L110</u>
<u>L109</u>	L108 and (motor or vehicle or automobile or	17	<u>L109</u>	<u>L109</u>	<u>L109</u>

	automotive or ecu)			
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<u>L108</u>	"6141710" "6289390" "6378001"	45	<u>L108</u>	<u>L108</u>
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<u>L107</u>	L106 and @ad<20021217	17	<u>L107</u>	<u>L107</u>
<u>L106</u>	L105 and (motor or vehicle or automobile or automotive or ecu)	1748	<u>L106</u>	<u>L106</u>
<u>L105</u>	L93 and (bb or bulletin adj board or storage) with availab\$6	6024	<u>L105</u>	<u>L105</u>
<u>L104</u>	L103 and (motor or vehicle or automobile or automotive or ecu)	1716	<u>L104</u>	<u>L104</u>
<u>L103</u>	L93 and (request\$3 or messag\$3 or (shared or common) near memory) with (storing or sav\$3)	7936	<u>L103</u>	<u>L103</u>
<u>L102</u>	L101 and (motor or vehicle or automobile or automotive or ecu)	17	<u>L102</u>	<u>L102</u>
<u>L101</u>	L100 and @ad<20021217	136	<u>L101</u>	<u>L101</u>
<u>L100</u>	L93 and (bb or bulletin adj board or storage or ((shared or common) near memory)) with availab\$6	6184	<u>L100</u>	<u>L100</u>
<u>L99</u>	L93 and (bb or bulletin adj board or storage or ((shared or common) near memory)) with availab\$6	6184	<u>L99</u>	<u>L99</u>
<u>L98</u>	L97 and @ad<20021217	4	<u>L98</u>	<u>L98</u>
<u>L97</u>	L96 and (shared or common) near memory	156	<u>L97</u>	<u>L97</u>
<u>L96</u>	L95 and (request\$3 or messag\$3) with (storing or sav\$3)	1701	<u>L96</u>	<u>L96</u>
<u>L95</u>	L93 and (motor or vehicle or automobile or automotive or ecu)	8584	<u>L95</u>	<u>L95</u>
<u>L94</u>	L93 and (request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$lout or watchdog)	2	<u>L94</u>	<u>L94</u>
<u>L93</u>	((((((((((G06F9/542))))))))))			
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<u>L92</u>	L91 and @ad<20021217	31	<u>L92</u>	<u>L92</u>

<u>L91</u>	(request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$1out or watchdog)	133	<u>L91</u>	<u>L91</u>	<u>L91</u>
<u>L90</u>	(request\$3 or messag\$3 or query\$3) with (shared or common) near memory with ((timer or time\$1out or watchdog) and availab\$6)	18	<u>L90</u>	<u>L90</u>	<u>L90</u>
<u>L89</u>	L88 and (request\$3 or messag\$3 or (shared or common) near memory) with (storing or sav\$3)	116	<u>L89</u>	<u>L89</u>	<u>L89</u>
<u>L88</u>	L87 and @ad<20021217	371	<u>L88</u>	<u>L88</u>	<u>L88</u>
<u>L87</u>	L86 and (shared or common) near memory	1474	<u>L87</u>	<u>L87</u>	<u>L87</u>
<u>L86</u>	availab\$7 with (timer or time\$1out or watchdog)	30130	<u>L86</u>	<u>L86</u>	<u>L86</u>
<u>L85</u>	L84 and @ad<20021217	27	<u>L85</u>	<u>L85</u>	<u>L85</u>
<u>L84</u>	(shared or common) near memory with ((timer or time\$1out or watchdog) and availab\$6)	125	<u>L84</u>	<u>L84</u>	<u>L84</u>
<u>L83</u>	L82 and (request\$3 or messag\$3 or (shared or common) near memory) with (storing or sav\$3)	74	<u>L83</u>	<u>L83</u>	<u>L83</u>
<u>L82</u>	L81 and @ad<20021217	317	<u>L82</u>	<u>L82</u>	<u>L82</u>
<u>L81</u>	L80 and (shared or common) near memory with (request\$3 or memory or access\$3)	837	<u>L81</u>	<u>L81</u>	<u>L81</u>
<u>L80</u>	(direct adj memory adj access or dma) with (timer or time\$1out)	6474	<u>L80</u>	<u>L80</u>	<u>L80</u>
<u>L79</u>	L78 and @ad<20021217	31	<u>L79</u>	<u>L79</u>	<u>L79</u>
<u>L78</u>	(request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$1out or watchdog)	133	<u>L78</u>	<u>L78</u>	<u>L78</u>
<u>L77</u>	L76 and (request\$3 or messag\$3) with (storing or sav\$3)	41	<u>L77</u>	<u>L77</u>	<u>L77</u>
<u>L76</u>	L75 and @ad<20021217	217	<u>L76</u>	<u>L76</u>	<u>L76</u>
<u>L75</u>	(shared or common) near memory with (timer or time\$1out or watchdog)	734	<u>L75</u>	<u>L75</u>	<u>L75</u>
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<u>L73</u>	L68 or L69 or L70 or L71 or L72	55	<u>L73</u>	<u>L73</u>	<u>L73</u>
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	automotive or ecu)				
<u>L65</u>	L63 and L64	6184	<u>L65</u>	<u>L65</u>	<u>L65</u>
<u>L64</u>	(bb or bulletin adj board or storage or((shared or	223184	<u>L64</u>	<u>L64</u>	<u>L64</u>
	common) near memory)) with availab\$6				
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<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>					
<u>L62</u>	L61 and @ad<20021217	1	<u>L62</u>	<u>L62</u>	<u>L62</u>
<u>L61</u>	L60 and L28	41	<u>L61</u>	<u>L61</u>	<u>L61</u>
<u>L60</u>	L59 and (motor or vehicle or automobile or	734	<u>L60</u>	<u>L60</u>	<u>L60</u>
	automotive or ecu)				
<u>L59</u>	(shared or common) near memory with availab\$6	7132	<u>L59</u>	<u>L59</u>	<u>L59</u>
<u>L58</u>	L57 and @ad<20021217	31	<u>L58</u>	<u>L58</u>	<u>L58</u>
	(request\$3 or messag\$3 or query\$3) with				
<u>L57</u>	(shared or common) near memory with (timer or	133	<u>L57</u>	<u>L57</u>	<u>L57</u>
	time\$1out or watchdog)				
	(request\$3 or messag\$3 or query\$3) with				
<u>L56</u>	(shared or common) near memory with ((timer	18	<u>L56</u>	<u>L56</u>	<u>L56</u>
	or time\$1out or watchdog) and availab\$6)				
<u>L55</u>	L54 and (request\$3 or messag\$3 or (shared or	116	<u>L55</u>	<u>L55</u>	<u>L55</u>
	common) near memory) with (storing or sav\$3)				

L54	L53 and @ad<20021217	371	L54	L54	L54
L53	L52 and (shared or common) near memory	1474	L53	L53	L53
L52	availab\$7 with (timer or time\$1out or watchdog)	30130	L52	L52	L52
L51	L50 and @ad<20021217	27	L51	L51	L51
L50	(shared or common) near memory with ((timer or time\$1out or watchdog) and availab\$6)	125	L50	L50	L50
L49	L48 and (request\$3 or messag\$3 or (shared or common) near memory) with (storing or sav\$3)	74	L49	L49	L49
L48	L47 and @ad<20021217	317	L48	L48	L48
L47	L46 and (shared or common) near memory with (request\$3 or memory or access\$3)	837	L47	L47	L47
L46	(direct adj memory adj access or dma) with (timer or time\$1out)	6474	L46	L46	L46
L45	L44 and @ad<20021217	31	L45	L45	L45
L44	(request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$1out or watchdog)	133	L44	L44	L44
L43	L42 and (request\$3 or messag\$3) with (storing or sav\$3)	41	L43	L43	L43
L42	L41 and @ad<20021217	217	L42	L42	L42
L41	(shared or common) near memory with (timer or time\$1out or watchdog)	734	L41	L41	L41
L40	L38 and L28	63	L40	L40	L40
L39	L29 and L38	3	L39	L39	L39
L38	L37 and @ad<20021217	16143	L38	L38	L38
L37	L33 and (motor or vehicle or automobile or automotive or ecu)	134015	L37	L37	L37
L36	L28 and L35	0	L36	L36	L36
L35	L34 and @ad<20021217	112	L35	L35	L35
L34	L32 and L33	419	L34	L34	L34
L33	(bb or bulletin adj board or storage) with availab\$6	458198	L33	L33	L33
L32	(bulletin near board or "bb").ab,ti.	41191	L32	L32	L32
L31	L30 and @ad<20021217	10	L31	L31	L31
L30	(bulletin near board or "bb") and L29	85	L30	L30	L30
L29	((request or message or query) and (storage near availab\$6)).ab,ti.	912	L29	L29	L29

((((((((((G06F9/542))))))))))

<u>L28</u>	((((((((G06F9/545))))))))) ((((((((G06F9/546))))))))) ((((((((H04L43/10))))))))) ((((((((H04L67/10))))))))) ((((((((B60R16/0231)))))))))cpc.	108476	<u>L28</u>	<u>L28</u>	<u>L28</u>
<u>L27</u>	"ANDREWS-SCOTT-STURGES"!	28	<u>L27</u>	<u>L27</u>	<u>L27</u>
<u>L26</u>	"FUCHS-AXEL"!	63	<u>L26</u>	<u>L26</u>	<u>L26</u>
<u>L25</u>	"FUCHS-AXEL"!	63	<u>L25</u>	<u>L25</u>	<u>L25</u>
<u>L24</u>	7802263.pn.	10	<u>L24</u>	<u>L24</u>	<u>L24</u>
<u>L23</u>	8209705.pn.	3	<u>L23</u>	<u>L23</u>	<u>L23</u>
<u>L22</u>	8566843.pn.	2	<u>L22</u>	<u>L22</u>	<u>L22</u>
<u>L21</u>	9575817.pn.	2	<u>L21</u>	<u>L21</u>	<u>L21</u>
<u>L20</u>	10002036.pn.	4	<u>L20</u>	<u>L20</u>	<u>L20</u>
<u>L19</u>	100020360.pn.	0	<u>L19</u>	<u>L19</u>	<u>L19</u>
<u>L18</u>	10020360.pn.	7	<u>L18</u>	<u>L18</u>	<u>L18</u>
<u>L17</u>	100020360.pn.	0	<u>L17</u>	<u>L17</u>	<u>L17</u>
<u>L16</u>	10031790.pn.	4	<u>L16</u>	<u>L16</u>	<u>L16</u>
<u>L15</u>	7802263.pn.	10	<u>L15</u>	<u>L15</u>	<u>L15</u>
<u>L14</u>	8209705.pn.	3	<u>L14</u>	<u>L14</u>	<u>L14</u>
<u>L13</u>	8566843.pn.	2	<u>L13</u>	<u>L13</u>	<u>L13</u>
<u>L12</u>	9575817.pn.	2	<u>L12</u>	<u>L12</u>	<u>L12</u>
<u>L11</u>	10002036.pn.	4	<u>L11</u>	<u>L11</u>	<u>L11</u>
<u>L10</u>	10031790.pn.	4	<u>L10</u>	<u>L10</u>	<u>L10</u>
<u>L9</u>	10248477.PN.	6	<u>L9</u>	<u>L9</u>	<u>L9</u>
<u>L8</u>	("20030223436" "5202887" "5469150" "5794164" "6292862" "6625169" "6657252" "6871250" "6934612").PN.	26	<u>L8</u>	<u>L8</u>	<u>L8</u>
<u>L7</u>	16042159	5	<u>L7</u>	<u>L7</u>	<u>L7</u>
<u>L6</u>	"ANDREWS-SCOTT-STURGES"!	28	<u>L6</u>	<u>L6</u>	<u>L6</u>
<u>L5</u>	"FUCHS-AXEL"!	63	<u>L5</u>	<u>L5</u>	<u>L5</u>
<u>L4</u>	"FUCHS-AXEL-DR-ING"!	1	<u>L4</u>	<u>L4</u>	<u>L4</u>
<u>L3</u>	"FUCHS-AXEL-DIPL-ING"!	1	<u>L3</u>	<u>L3</u>	<u>L3</u>
<u>L2</u>	((H04L67/02) (H04L43/10) (G06F9/542) (H04L43/06) (G06F9/54) (H04L43/04) (H04L43/08) (H04L67/10) (H04L67/12) (B60R16/0231) (G06F9/546) (G06F9/545) (G06F2209/547) (H04L65/102)).cpc.	252451	<u>L2</u>	<u>L2</u>	<u>L2</u>
<u>L1</u>	20210357276	2	<u>L1</u>	<u>L1</u>	<u>L1</u>

END OF SEARCH HISTORY

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17387988
	Filing Date	2021-07-28
	First Named Inventor	Axel Fuchs
	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

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	Attorney Docket Number	SVIPGP061J

	1	PR2017-01503 (Final Written Decision, published 12/6/2018)	
	2	PR2017-01504 (Final Written Decision, published 12/6/2018)	
	3	PR2017-01519 (Final Written Decision, published 12/6/2018)	
	4	PR2017-01520 (Final Written Decision, published 12/6/2018)	
	5	PR2017-01521 (Final Written Decision, published 12/6/2018)	
	6	PR2017-01522 (Final Written Decision, published 12/6/2018)	
	7	PR2021-00417 (Institution decision, published 7/19/2021)	
	8	PR2021-00418 (Institution DENIED, published 7/19/2021)	
	9	PR2021-00419 (Institution DENIED, published 7/19/2021)	
	10	PR2021-00425 (Institution DENIED, published 7/19/2021)	
	11	PR2021-00426 (Institution DENIED, published 7/19/2021)	

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12	PR2021-00427 (Institution DENIED, published 7/19/2021)
13	PR2021-00726 (Institution DENIED, published 10/1/2021)
14	PR2021-00727 (Institution DENIED, published 10/1/2021)
15	PR2021-00728 (Institution DENIED, published 10/1/2021)
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23	Leen et al. "Expanding Automotive Electronic Systems" Jan 2002, Computer 35(1)
24	Mellor-Crummey et al. "Algorithms for Scalable Synchronization on Shared-Memory Multiprocessors," ACM Transactions on Computer Systems, Vol. 9, No. 1, February 1991, Pages 21-65
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34	Stewart et al. "The Chimera II Real-Time Operating System for Advanced Sensor-Based Control Applications" 1992, IEEE Transactions On Systems, Man, and Cybernetics, Vol. 22, No. 6
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	Art Unit	2194
	Examiner Name	Charles E ANYA
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45	Case Number DEL 1:20-cv-00511
46	Case Number DEL 1:20-cv-00512

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Examiner Signature	/CHARLES E ANYA/	Date Considered	04/05/2022
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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).

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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.

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Name/Print	Patrick Caldwell	Registration Number	44580

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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	1	10002036	B2	2018-06-19	Fuchs et al.	Entire Document
	2	10031790	B1	2018-07-24	Fuchs et al.	Entire Document
	3	10248477	B2	2019-04-02	Fuchs et al.	Entire Document
	4	4099255	A	1978-07-04	Stanley et al.	Entire Document
	5	5202887	A	1993-04-13	Ueno et al.	Entire Document
	6	5469150	A	1995-11-21	Sitte	Entire Document
	7	5588002	A	1996-12-24	Kawanishi et al.	Entire Document
	8	5794164	A	1998-08-11	Beckert et al.	Entire Document

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	Attorney Docket Number	SVIPGP061J

9	5854454	A	1998-12-29	Upender et al.	Entire Document
10	5956489	A	1999-09-21	Andres et al.	Entire Document
11	6034970	A	2000-03-07	Levac et al.	Entire Document
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13	6289390	B1	2001-09-11	Kavner	Entire Document
14	6292862	B1	2001-09-18	Barrenscheen et al.	Entire Document
15	6378001	B1	2002-04-23	Aditham et al.	Entire Document
16	6434459	B2	2002-08-13	Wong et al.	Entire Document
17	6484082	B1	2002-11-19	Millsap et al.	
18	6625169	B1	2003-09-23	Tofano	Entire Document
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	First Named Inventor	Axel Fuchs
	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

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Receipt date: 12/09/2021

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		17387988	
	Filing Date		2021-07-28	
	First Named Inventor	Axel Fuchs		
	Art Unit	2194		
	Examiner Name	Charles E ANYA		
	Attorney Docket Number	SVIPGP061J		

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	1	1355456	EP	A1	2003-10-22	Forest et al.	Entire Document	

Receipt date: 12/09/2021

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	First Named Inventor	Axel Fuchs		
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	Examiner Name	Charles E ANYA		
	Attorney Docket Number	SVIPGP061J		

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	1	An Embedded Software Primer," David E. Simon, 1999	
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Receipt date: 12/09/2021

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	Filing Date	2021-07-28
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	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

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**INFORMATION DISCLOSURE
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Application Number	17387988
Filing Date	2021-07-28
First Named Inventor	Axel Fuchs
Art Unit	2194
Examiner Name	Charles E ANYA
Attorney Docket Number	SVIPGP061J

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Receipt date: 12/09/2021

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First Named Inventor	Axel Fuchs
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Examiner Name	Charles E ANYA
Attorney Docket Number	SVIPGP061J

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Receipt date: 12/09/2021

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	Filing Date	2021-07-28
	First Named Inventor	Axel Fuchs
	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

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	Filing Date	2021-07-28
	First Named Inventor	Axel Fuchs
	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

EXAMINER SIGNATURE			
Examiner Signature	/CHARLES E ANYA/	Date Considered	04/05/2022
*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.			

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STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	17387988
Filing Date	2021-07-28
First Named Inventor	Axel Fuchs
Art Unit	2194
Examiner Name	Charles E ANYA
Attorney Docket Number	SVIPGP061J

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	/Patrick Caldwell/	Date (YYYY-MM-DD)	2021-12-09
Name/Print	Patrick Caldwell	Registration Number	44580

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: 17/387,988

Foreign Priority claimed: ☐ Yes ☒ No

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

Verified and Acknowledged:

/CHARLES E ANYA/

Examiner's Signature

Initials

Title:

SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT
FOR SHARING INFORMATION IN A DISTRIBUTED
FRAMEWORK

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
07/28/2021	719	2194	
RULE			

APPLICANTS

Stragent LLC, Longview, TX,

INVENTORS

Axel Fuchs, Richmond, CA, UNITED STATES

Scott Sturges Andrews, Petaluma, CA, UNITED STATES

CONTINUING DATA

This application is a CON of 16042159 07/23/2018 PAT 11188400

16042159 is a CON of 15919201 03/12/2018 PAT 10031790

15919201 is a CON of 15405110 01/12/2017 PAT 10002036

15405110 is a CON of 14011705 08/27/2013 PAT 9575817

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13531319 is a CON of 12182570 07/30/2008 PAT 8209705

12182570 is a CON of 10737690 12/15/2003 PAT 7802263

10737690 has PRO of 60434018 12/17/2002

FOREIGN APPLICATIONS

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Electronic Acknowledgement Receipt	
EFS ID:	45212345
Application Number:	17387988
International Application Number:	
Confirmation Number:	8451
Title of Invention:	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK
First Named Inventor/Applicant Name:	Axel Fuchs
Customer Number:	92045
Filer:	Patrick Edgar Caldwell
Filer Authorized By:	
Attorney Docket Number:	SVIPGP061J
Receipt Date:	11-MAR-2022
Filing Date:	28-JUL-2021
Time Stamp:	23:42:24
Application Type:	Utility under 35 USC 111(a)

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Supplemental Response or Supplemental Amendment	SVIPGP061J_Supp_Amendmen t_vF_11-Mar-2022.pdf	87338 c5a29126f51620317ceb4e0962515f3ecb88e9b3	no	13

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Confirmation No.: 8451
Axel Fuchs	Examiner: ANYA, CHARLES E
Application No.: 17/387,988	Art Unit: 2194
File Date: 2021-07-28	Docket No.: SVIPGP061J
Title: SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK	Date: March 11, 2022

SUPPLEMENTAL AMENDMENT

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

Examiner:

As a supplement to the response filed 12/8/2021, which was in response to the Action mailed 11/24/2021, please enter the following amendments. Applicant notes that the response filed 12/8/2021 was incorrectly noted as a "PRELIMINARY AMENDMENT" even though it was a full response to the 11/24/2021 Action. Given that the applicant reached out to the applicant in 12/2021 to explain the situation, it is assumed that the response filed 12/8/2021 has been entered. That being said, for avoidance of doubt and to close the loop on any assumptions, the present supplemental is being filed to correct (if needed) the previously incorrectly noted response. The present supplemental amendment is based on the claims filed 12/8/2021 (and which presumably have been entered).

Amendments to the Claims:

The listing of amended claims follow:

1.-30. (Cancelled)

31. (Previously presented) A method, comprising:

at an automotive electronic control unit:

receiving sensor information associated with a message;

based on receiving the sensor information, issuing, to a storage included in the automotive electronic control unit, a request to access the storage included in the automotive electronic control unit to store the sensor information and, based on issuing the request, determining whether the storage is available to store the sensor information;

determining whether a value tracked since the issuance of the request has been reached indicating that the storage has not been available in association with the value tracked since the issuance of the request;

based on the storage included in the automotive electronic control unit being determined, based on issuing the request, to not be available and the value tracked since the issuance of the request having not been reached indicating that the storage has not been available in association with the value tracked since the issuance of the request, issuing, to the storage included in the automotive electronic control unit, another request to access the storage included in the automotive electronic control unit to store the sensor information;

based on the storage included in the automotive electronic control unit being determined, based on issuing the request or the another request, to not be available

and the value tracked since the issuance of the request having been reached, sending an error notification; and

based on the storage included in the automotive electronic control unit being determined, based on issuing the request or the another request, to be available, storing the sensor information utilizing the storage.

32. (Previously presented) The method as recited in claim 31, wherein the sensor information reaches a destination in less than one second.

33. (Previously presented) The method as recited in claim 31, wherein the sensor information reaches a destination in less than a millisecond.

34. (Previously presented) The method as recited in claim 31, wherein a duration between the sensor information being received and being transmitted is less than one second.

35. (Currently amended) The method as recited in claim 31, wherein a duration between the sensor information being received and transmitt[[t]]ing being completed is less than a millisecond.

36. (Previously presented) The method as recited in claim 31, wherein the sensor information is transmitted from the automotive electronic control unit in less than a millisecond from a time when the message is received at the automotive electronic control unit.

37. (Previously presented) The method as recited in claim 31, wherein automotive sensor data is transmitted between heterogeneous networks including at least one of a Controller Area Network, a Flexray network, or a Local Interconnect Network.

38. (Previously presented) An apparatus, comprising:

an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for:

identifying sensor information associated with a message received utilizing a first network protocol associated with a first network;

in response to identifying the sensor information, issuing, by the at least one hardware processor and to a storage included in the automotive electronic control unit, a request to access the storage included in the automotive electronic control unit to store the sensor information and, in response to issuing the request, determining whether the storage is available to store the sensor information;

determining whether a value tracked since the issuance of the request has been reached;

in the event the storage included in the automotive electronic control unit is determined, in response to issuing the request, to not be available and the value tracked since the issuance of the request has not been reached, issuing, by the at least one hardware processor to the storage included in the automotive electronic control unit, another request to access the storage included in the automotive electronic control unit to store the sensor information;

in the event the storage included in the automotive electronic control unit is determined, in response to issuing the another request, to not be available and the

value tracked since the issuance of the request has been reached, sending an error notification; and

in the event the storage included in the automotive electronic control unit is determined, in response to issuing the request or the another request, to be available, storing the sensor information utilizing the storage;

wherein the apparatus is operable such that the sensor information is capable of being transmitted in less than one second utilizing a second network protocol associated with a second network, where the first network is one of a Controller Area Network, a Flexray network, or a Local Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.

39. (Previously presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that network layer translation is capable of being avoided.

40. (Previously presented) The apparatus as recited in claim 38, wherein the apparatus is configured for sharing automotive sensor data received via the first network for use in connection with an automotive device on the second network, in less than the one second.

41. (Previously presented) The apparatus as recited in claim 38, wherein the apparatus is configured for sharing automotive sensor data received via the first network for use in connection with an automotive actuator on the second network, in less than a millisecond.

42. (Previously presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that the request and the another request are identical.

43. (Previously presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that the request and the another request are the same.

44. (Previously presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that the sensor information excludes all header bits of the message.

45. (Previously presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that the sensor information excludes at least a portion of any header bits of the message.

46. (Previously presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that the storage includes a bulletin board.

47. (Previously presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that the error notification is sent, when the storage included in the automotive electronic control unit is determined, in response to issuing the request, to not be available and the value tracked since the issuance of the request has been reached.

48. (Previously presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that the error notification is sent, when the storage included in the automotive electronic control unit is determined, in response to issuing the another request, to not be available and the value tracked since the issuance of the request has been reached.

49. (Previously presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that the error notification is sent, when the storage included in the automotive electronic control unit is determined, in response to issuing the request and the another request, to not be available and the value tracked since the issuance of the request has been reached.

50. (Cancelled)

51. (Previously presented) A non-volatile or volatile computer-readable medium of an automotive electronic control unit for storing a computer program product including code that, when executed by at least one hardware processor included in the automotive electronic control unit in communication with the computer-readable medium, is for:

receiving sensor information associated with a message received utilizing a first network protocol associated with a first network;

in response to receiving the sensor information, issuing, by the at least one hardware processor and to a storage included in the automotive electronic control unit, a request to access the storage included in the automotive electronic control unit, for determining whether the storage included in the automotive electronic control unit is available to store the sensor information;

determining whether a time-related value tracked after the issuance of the request has been reached in association with the determination whether the storage is available;

when the storage included in the automotive electronic control unit is determined to not be available and the value associated with the determination whether the storage is available has not been reached, issuing, by the at least one hardware processor to the storage included in the automotive electronic control unit, another request to access the storage included in the automotive electronic control unit to store the sensor information;

when the storage included in the automotive electronic control unit is determined to not be available and the value associated with determination whether the storage is available has been reached, ceasing repeating issuance of another request; and

when the storage included in the automotive electronic control unit is determined to be available, storing the sensor information utilizing the storage;

wherein the computer program product is operable such that the sensor information is capable of being transmitted in less than one second utilizing the automotive electronic control unit that remains in hardwired communication with the first network and a second network.

52. (Previously presented) The computer-readable medium as recited in claim 51, wherein the computer program product is operable such that the sensor information reaches a destination on the second network in less than one second.

53. (Previously presented) The computer-readable medium as recited in claim 51, wherein the computer program product is operable such that the sensor information reaches a destination on the second network in less than a millisecond.

54. (Previously presented) The computer-readable medium as recited in claim 51, wherein the computer program product is operable such that a duration between the sensor information being received and the transmitting being completed is less than one second.

55. (Previously presented) The computer-readable medium as recited in claim 51, wherein the computer program product is operable such that a duration between the sensor information being received and the transmitting being completed is less than a millisecond, where the first network is one of a Controller Area Network, a Flexray network, or a Local

Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.

56. (Previously presented) The computer-readable medium as recited in claim 51, wherein the computer program product is operable such that the transmitting of the sensor information is completed in less than a millisecond, where the first network is one of a Controller Area Network, a Flexray network, or a Local Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.

57. (Previously presented) The computer-readable medium as recited in claim 51, wherein the computer program product is configured for transmitting the sensor information in the form of automotive sensor data received via the first network for use in connection with an automotive device on the second network, in less than one millisecond.

58. (Currently Amended) The method as recited in claim 36, wherein at least one of:

- the storage includes volatile memory;
- the storage includes non-volatile memory;
- the storage includes a storage resource;
- the sensor information includes original data received from a sensor or derived data derived from original data received from the sensor;
- the value is time-related;
- the value is a timeout;
- the value includes a duration value;

- the value does not include a duration value;
- the value is configurable;
- the value is a threshold;
- the transmitting includes sharing;
- the information is transmitted[[,]] with requiring storage of the information prior to the transmitting;
- the information is transmitted[[,]] without a limitation that the information be transmitted without requiring storage of the information prior to the transmitting;
- the determining whether the storage is available to store the sensor information, is not performed for a message in the automotive electronic control unit in conjunction with the message being received by the automotive electronic control unit;
- the determining whether the storage is available to store the sensor information, is not performed for a message in the automotive electronic control unit;
- the determining whether the storage is available to store the sensor information, is not performed in conjunction with the message being received by the automotive electronic control unit;
- the request includes a storage resource request;
- the issuing of the request[[,]] is not performed for a message in the automotive electronic control unit in conjunction with the message being received by the automotive electronic control unit;
- the issuing of the request[[,]] is not performed for a message in the automotive electronic control unit;
- the issuing of the request[[,]] is not performed for a message in the automotive electronic control unit, but rather for the information thereof; or

Application No.: 17/387,988

the issuing of the request[,] is not performed in conjunction with the message being received by the automotive electronic control unit.

Remarks:

The claims have been clarified. Claims 35 and 58 are amended herein. As indicated on the coverpage, the present response is a supplement to the response filed 12/8/2021, which was in response to the Action mailed 11/24/2021. Applicant notes that the response filed 12/8/2021 was incorrectly noted as a "PRELIMINARY AMENDMENT" even though it was a full response to the 11/24/2021 Action. Given that the applicant reached out to the applicant in 12/2021 to explain the situation, it is assumed that the response filed 12/8/2021 has been entered. That being said, for avoidance of doubt and to close the loop on any assumptions, the present supplemental is being filed to correct (if needed) the previously incorrectly noted response. The present supplemental amendment is based on the claims filed 12/8/2021 (and which presumably have been entered).

As indicted in the 12/8/2021 response, with respect to Claims 31, 38 and 51 being rejected on the ground of non-statutory double patenting as being unpatentable over US9705765, US8566843, and 16/042,159, a terminal disclaimer was previously submitted, and this rejection is deemed avoided by virtue of such terminal disclaimer.

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In the event a telephone conversation would expedite the prosecution of this application, applicant invites the Examiner to telephone the undersigned attorney at the number listed below. The Commissioner is authorized to charge any additional fees (include extension fees if needed) or credit any overpayment to Deposit Account No. 50-4964 (Order No. SVIPGP061J).

Respectfully submitted,



Dated: 11 Mar 2022
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Patrick E. Caldwell, Esq.
Reg. No. 44,580

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17387988
	Filing Date	2021-07-28
	First Named Inventor	Axel Fuchs
	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

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	Art Unit	2194	
	Examiner Name	Charles E ANYA	
	Attorney Docket Number	SVIPGP061J	

	1	PR2017-01503 (Final Written Decision, published 12/6/2018)	
	2	PR2017-01504 (Final Written Decision, published 12/6/2018)	
	3	PR2017-01519 (Final Written Decision, published 12/6/2018)	
	4	PR2017-01520 (Final Written Decision, published 12/6/2018)	
	5	PR2017-01521 (Final Written Decision, published 12/6/2018)	
	6	PR2017-01522 (Final Written Decision, published 12/6/2018)	
	7	PR2021-00417 (Institution decision, published 7/19/2021)	
	8	PR2021-00418 (Institution DENIED, published 7/19/2021)	
	9	PR2021-00419 (Institution DENIED, published 7/19/2021)	
	10	PR2021-00425 (Institution DENIED, published 7/19/2021)	
	11	PR2021-00426 (Institution DENIED, published 7/19/2021)	

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	First Named Inventor	Axel Fuchs	
	Art Unit	2194	
	Examiner Name	Charles E ANYA	
	Attorney Docket Number	SVIPGP061J	

12	PR2021-00427 (Institution DENIED, published 7/19/2021)
13	PR2021-00726 (Institution DENIED, published 10/1/2021)
14	PR2021-00727 (Institution DENIED, published 10/1/2021)
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	Art Unit	2194	
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	Attorney Docket Number	SVIPGP061J	

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	Filing Date	2021-07-28
	First Named Inventor	Axel Fuchs
	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

45	Case Number DEL 1:20-cv-00511
46	Case Number DEL 1:20-cv-00512

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	Filing Date	2021-07-28
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	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

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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.

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SIGNATURE

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

Signature	/Patrick Caldwell/	Date (YYYY-MM-DD)	2021-12-09
Name/Print	Patrick Caldwell	Registration Number	44580

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Application Number:		17387988		
Filing Date:		28-Jul-2021		
Title of Invention:		SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		
First Named Inventor/Applicant Name:		Axel Fuchs		
Filer:		Patrick Edgar Caldwell		
Attorney Docket Number:		SVIPGP061J		
Filed as Large 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:				
STATUTORY OR TERMINAL DISCLAIMER	1814	1	170	170
Total in USD (\$)				170

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EFS ID:	44481867
Application Number:	17387988
International Application Number:	
Confirmation Number:	8451
Title of Invention:	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK
First Named Inventor/Applicant Name:	Axel Fuchs
Customer Number:	92045
Filer:	Patrick Edgar Caldwell
Filer Authorized By:	
Attorney Docket Number:	SVIPGP061J
Receipt Date:	09-DEC-2021
Filing Date:	28-JUL-2021
Time Stamp:	22:20:32
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$170
RAM confirmation Number	E2021B9M20593466
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26	Non Patent Literature	NPLs_Part10.pdf	24072800	no	208
			97bc12466e82209f5a1030e90d674b4d5c4d8806		
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27	Non Patent Literature	NPLs_Part11.pdf	8968545	no	58
			366a9f3233bca0e2558fe077cb7649b5d3fbdea2		
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28	Non Patent Literature	Posadas-Communications_Structure.pdf	1762637	no	6
			f5c6e63add8ccad2b12b62837801a00521c21a99		
Warnings:					
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29	Non Patent Literature	Posadas-Mobile_robots.pdf	354132	no	10
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30	Non Patent Literature	Steward-Chimera.pdf	69040	no	21
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31	Non Patent Literature	Stragent_IC.pdf	360866	no	55
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32	Non Patent Literature	Volvo_Volcano.pdf	332512	no	14
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33	Non Patent Literature	Wense_AdvancedMicrosystems.pdf	1247060	no	24
			bc48616a8d9a8c07125f10fde40063d2b39c75d5		
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Information:					

34	Non Patent Literature	J2366_1_200111_vR.pdf	8347885	no	15				
			650ff34b414c7dab0f9e9ee9f194618e5a521208						
Warnings:									
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35	Fee Worksheet (SB06)	fee-info.pdf	38194	no	2				
			7912413c6ba6ef14c9ad7a3ae8f250093b68406b						
Warnings:									
Information:									
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17387988
	Filing Date	2021-07-28
	First Named Inventor	Axel Fuchs
	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

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	1	10002036	B2	2018-06-19	Fuchs et al.	Entire Document
	2	10031790	B1	2018-07-24	Fuchs et al.	Entire Document
	3	10248477	B2	2019-04-02	Fuchs et al.	Entire Document
	4	4099255	A	1978-07-04	Stanley et al.	Entire Document
	5	5202887	A	1993-04-13	Ueno et al.	Entire Document
	6	5469150	A	1995-11-21	Sitte	Entire Document
	7	5588002	A	1996-12-24	Kawanishi et al.	Entire Document
	8	5794164	A	1998-08-11	Beckert et al.	Entire Document

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	9	5854454	A	1998-12-29	Upender et al.	Entire Document
	10	5956489	A	1999-09-21	Andres et al.	Entire Document
	11	6034970	A	2000-03-07	Levac et al.	Entire Document
	12	6141710	A	2000-10-31	Miesterfeld	Entire Document
	13	6289390	B1	2001-09-11	Kavner	Entire Document
	14	6292862	B1	2001-09-18	Barrenscheen et al.	Entire Document
	15	6378001	B1	2002-04-23	Aditham et al.	Entire Document
	16	6434459	B2	2002-08-13	Wong et al.	Entire Document
	17	6484082	B1	2002-11-19	Millsap et al.	
	18	6625169	B1	2003-09-23	Tofano	Entire Document
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	Examiner Name	Charles E ANYA	
	Attorney Docket Number	SVIPGP061J	

	20	6801942	B1	2004-10-05	Dietrich et al.	Entire Document
	21	6871250	B2	2005-03-22	Froeschl et al.	Entire Document
	22	6934612	B2	2005-08-23	Remboski et al.	Entire Document
	23	7103045	B2	2006-09-05	LaVigne et al.	Entire Document
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	25	7103656	B2	2006-09-05	Lewis et al.	Entire Document
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	27	7802263	B2	2010-09-21	Fuchs et al.	Entire Document
	28	8209705	B2	2012-06-26	Fuchs et al.	Entire Document
	29	8566843	B2	2013-10-22	Fuchs et al.	Entire Document
	30	9705765	B2	2017-07-11	Fuchs et al.	Entire Document

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	Art Unit		2194	
	Examiner Name		Charles E ANYA	
	Attorney Docket Number		SVIPGP061J	

	31	9575817	B2	2017-02-21	Fuchs et al.	Entire Document
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	1	20020073243	A1	2002-06-13	Staiger	Entire Document
	2	20020124007	A1	2002-09-05	Zhao	Entire Document
	3	20030040881	A1	2003-02-27	Steger et al.	Entire Document
	4	20030043739	A1	2003-03-06	Reinold et al.	Entire Document
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	1	1355456	EP	A1	2003-10-22	Forest et al.	Entire Document	

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	Attorney Docket Number	SVIPGP061J		

	2	1355458	EP	B1	2005-09-21	Forest et al.	Entire Document	
	3	2002054163	WO	A1	2002-07-11	Niklasson	Entire Document	

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NON-PATENT LITERATURE DOCUMENTS

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	"An Embedded Software Primer," David E. Simon, 1999	
	2	"Application of In-Vehicle Data Buses for Collision Avoidance Systems," William D. Horne, et al., 1998	
	3	"Goals and Motivation: What is OSEK/VDX," OSEK VDX Portal, 2012	
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	6	"OSEK/VDX Binding Specification Version 1.4," OSEK Group, Sept. 6, 2002	
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	Art Unit	2194
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	Attorney Docket Number	SVIPGP061J

8	"OSEK/VDX Communication Specification Version 2.2.2," OSEK Group, Dec. 18, 2000
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13	"OSEK/VDX Network Management Concept and Application Programming Interface Version 2.5.0," OSEK Group, May 31, 1998
14	"OSEK/VDX Network Management Concept and Application Programming Interface Version 2.5.1," OSEK Group, May 31, 2000
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16	"OSEK/VDX OSEK Implementation Language Specification Version 2.3," OSEK Group, Sept. 10, 2001
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17387988
	Filing Date	2021-07-28
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	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

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	Attorney Docket Number	SVIPGP061J	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		17387988
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	49	IPR2017-00677 (Final Written Decision, published 6/13/2018)		
	50	IPR2017-01502 (Final Written Decision, published 12/6/2018)		
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17387988
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	First Named Inventor	Axel Fuchs
	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	
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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	17387988
	Filing Date	2021-07-28
	First Named Inventor	Axel Fuchs
	Art Unit	2194
	Examiner Name	Charles E ANYA
	Attorney Docket Number	SVIPGP061J

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	/Patrick Caldwell/	Date (YYYY-MM-DD)	2021-12-09
Name/Print	Patrick Caldwell	Registration Number	44580

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 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.

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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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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Confirmation No.: 8451
Axel Fuchs	Examiner: ANYA, CHARLES E
Application No.: 17/387,988	Art Unit: 2194
File Date: 2021-07-28	Docket No.: SVIPGP061J
Title: SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK	Date: December 9, 2021

**INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §§ 1.56 AND 1.97(b)**

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

Examiner:

The reference(s) listed in the attached PTO Form 1449, cop(ies) of which is attached (when necessary), may be material to examination of the above-identified patent application. Applicants submit the reference(s) in compliance with their duty of disclosure pursuant to 37 CFR §§ 1.56 and 1.97. The Examiner is requested to make the reference(s) of official record in this application.

Per MPEP 609.02, applicant may not necessarily have re-submitted all of the disclosures, references, etc. cited in any parent application(s)/patent(s). It is assumed that, per such MPEP section, the Examiner has considered the same in connection with the instant application. If

Information Disclosure Statement

applicant's assumption is in error or the Examiner requires re-submission of any such references, etc., applicant requests that the Examiner contact the undersigned so that applicant can address the same. This Information Disclosure Statement is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that the reference(s) indeed constitutes prior art.

Related patents (e.g. US7802263, US8209705, US8566843, US9705765, US10248477, US10031790, US10002036) are (or were) the subject of litigation (EDTX 6:11-cv-00111 (closed), EDTX 6:16-cv-00446 (closed), EDTX 6:16-cv-00447 (closed), EDTX 6:16-cv-00448 (closed); DEL 1:20-cv-00510 (pending), DEL 1:20-cv-00511 (pending), DEL 1:20-cv-00512 (pending)). Invalidity contentions were received and the references submitted to the Examiner for consideration. Further, related patents (e.g. US8209705, US8566843, US9705765, US10248477, US10031790, and US10002036) are (or were) the subject of pending inter partes reviews (IPR2017-00457 (closed), IPR2017-00458 (closed), IPR2017-00676 (closed), IPR2017-00677 (closed), IPR2017-01502 (closed), IPR2017-01503 (closed), IPR2017-01504 (closed), IPR2017-01519 (closed), IPR2017-01520 (closed), IPR2017-01521 (closed), IPR2017-01522 (closed), IPR2021-00417 (pending), IPR2021-00418 (denied institution), IPR2021-00419 (denied institution), IPR2021-00425 (denied institution), IPR2021-00426 (denied institution), IPR2021-00427 (denied institution), IPR2021-00726 (denied institution-merits), IPR2021-00727 (denied institution-merits), IPR2021-00728 (denied institution-merits)) and the references cited therein are (or were) submitted. Additionally, Claims 1-11, and 13-23 were statutorily disclaimed for related patent US9705765.

Information Disclosure Statement

This Information Disclosure Statement is believed to be filed in response to a non-final office action. Accordingly, requisite fees are paid in connection with the filing of this Information Disclosure Statement.

Respectfully submitted,



Dated: 09 Dec 2021
The Caldwell Firm, LLC
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Dallas, Texas 75229-0655
Telephone: (214) 734-2313
pcaldwell@thecaldwellfirm.com

Patrick E. Caldwell, Esq.
Reg. No. 44,580

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Confirmation No.: 8451
Axel Fuchs	Examiner: ANYA, CHARLES E
Application No.: 17/387,988	Art Unit: 2194
File Date: 2021-07-28	Docket No.: SVIPGP061J
Title: SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK	Date: December 9, 2021

PRELIMINARY AMENDMENT

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

Examiner:

In response to the Action mailed 11/24/2021, please enter the following amendments.

Amendments to the Claims:

The listing of amended claims follow:

1.-30. (Cancelled)

31. (Currently Amended) A ~~[[system]]~~method, comprising:

~~at an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for:~~

receiving sensor information associated with a message;

~~in response to~~ based on receiving the sensor information, issuing, ~~by the at least one hardware processor and to a storage [[resource]] included in the automotive electronic control unit, a storage resource request to access the storage [[resource]] included in the automotive electronic control unit to store the sensor information and,~~ in response to based on issuing the ~~storage resource~~ request, determining whether the storage [[resource]] is available to store the sensor information;

determining whether a ~~[[threshold]]~~value tracked since the issuance of the ~~storage resource~~ request has been reached indicating that the storage [[resource]] has not been available in association with the ~~[[threshold]]~~value tracked since the issuance of the ~~storage resource~~ request;

~~[[when]]~~based on the storage [[resource]] included in the automotive electronic control unit ~~[[is]]~~being determined, ~~in response to~~ based on issuing the ~~storage resource~~ request, to not be available and the ~~[[threshold]]~~value tracked since the issuance of the ~~storage resource~~ request ~~[[has]]~~having not been reached indicating that the storage [[resource]] has not been available in association with the ~~[[threshold]]~~value tracked

since the issuance of the ~~storage resource~~ request, issuing, ~~by the at least one hardware processor~~ to the storage ~~[[resource]]~~ included in the automotive electronic control unit, another ~~storage resource~~ request to access the storage ~~[[resource]]~~ included in the automotive electronic control unit to store the sensor information;

~~[[when]]~~based on the storage ~~[[resource]]~~ included in the automotive electronic control unit ~~[[is]]~~being determined, ~~in response to~~ based on issuing the ~~storage resource~~ request or the another ~~storage resource~~ request, to not be available and the ~~[[threshold]]~~value tracked since the issuance of the ~~storage resource~~ request ~~[[has]]~~having been reached, sending an error notification; and

~~[[when]]~~based on the storage ~~[[resource]]~~ included in the automotive electronic control unit ~~[[is]]~~being determined, ~~in response to~~ based on issuing the ~~storage resource~~ request or the another ~~storage resource~~ request, to be available, storing the sensor information utilizing the storage ~~[[resource]]~~.

32. (Currently Amended) The ~~[[system]]~~method as recited in claim 31, wherein ~~the system is operable such that~~ the sensor information reaches a destination in less than one second.

33. (Currently Amended) The ~~[[system]]~~method as recited in claim 31, wherein ~~the system is operable such that~~ the sensor information reaches a destination in less than a millisecond.

34. (Currently Amended) The ~~[[system]]~~method as recited in claim 31, wherein ~~the system is operable such that~~ a duration between the sensor information being received and being ~~[[shared]]~~transmitted is less than one second.

35. (Currently Amended) The ~~[[system]]~~method as recited in claim 31, wherein ~~the system is operable such that~~ a duration between the sensor information being received and ~~[[the sharing]]~~transmittting being completed is less than a millisecond.

36. (Currently Amended) The ~~[[system]]~~method as recited in claim 31, wherein ~~the system is operable such that~~ the sensor information is ~~[[shared]]~~transmitted from the automotive electronic control unit in less than a millisecond from a time when the message is received at the automotive electronic control unit.

37. (Currently Amended) The ~~[[system]]~~method as recited in claim 31, wherein ~~the system is configured for sharing~~ automotive sensor data is transmitted between heterogeneous networks including at least one of a Controller Area Network, a Flexray network, or a Local Interconnect Network.

38. (Currently Amended) An apparatus, comprising:

an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for:

identifying sensor information associated with a message received utilizing a first network protocol associated with a first network;

in response to identifying the sensor information, issuing, by the at least one hardware processor and to a storage ~~[[resource]]~~ included in the automotive electronic control unit, a ~~storage-resource~~ request to access the storage ~~[[resource]]~~ included in the automotive electronic control unit to store the sensor information and, in response to issuing the ~~storage-resource~~ request, determining whether the storage ~~[[resource]]~~ is available to store the sensor information;

determining whether a [[threshold]]value tracked since the issuance of the ~~storage resource~~ request has been reached ~~indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request;~~

in the event the storage [[resource]] included in the automotive electronic control unit is determined, in response to issuing the ~~storage resource~~ request, to not be available and the [[threshold]]value tracked since the issuance of the ~~storage resource~~ request has not been reached ~~indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request,~~ issuing, by the at least one hardware processor to the storage [[resource]] included in the automotive electronic control unit, another ~~storage resource~~ request to access the storage [[resource]] included in the automotive electronic control unit to store the sensor information;

in the event the storage [[resource]] included in the automotive electronic control unit is determined, in response to issuing the another ~~storage resource~~ request, to not be available and the [[threshold]]value tracked since the issuance of the ~~storage resource~~ request has been reached, sending an error notification; and

in the event the storage [[resource]] included in the automotive electronic control unit is determined, in response to issuing the ~~storage resource~~ request or the another ~~storage resource~~ request, to be available, storing the sensor information utilizing the storage [[resource]];

wherein the apparatus is operable such that the sensor information is capable of being [[shared]]transmitted in less than one second utilizing a second network protocol associated with a second network, where the first network is one of a Controller Area Network, a Flexray network, or a Local Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.

39. (Previously Presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that network layer translation is capable of being avoided.

40. (Previously Presented) The apparatus as recited in claim 38, wherein the apparatus is configured for sharing automotive sensor data received via the first network for use in connection with an automotive device on the second network, in less than the one second.

41. (Previously Presented) The apparatus as recited in claim 38, wherein the apparatus is configured for sharing automotive sensor data received via the first network for use in connection with an automotive actuator on the second network, in less than a millisecond.

42. (Currently Amended) The apparatus as recited in claim 38, wherein the apparatus is operable such that the ~~storage-resource~~ request and the another ~~storage-resource~~ request are identical.

43. (Currently Amended) The apparatus as recited in claim 38, wherein the apparatus is operable such that the ~~storage-resource~~ request and the another ~~storage-resource~~ request are the same.

44. (Previously Presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that the sensor information excludes all header bits of the message.

45. (Previously Presented) The apparatus as recited in claim 38, wherein the apparatus is operable such that the sensor information excludes at least a portion of any header bits of the message.

46. (Currently Amended) The apparatus as recited in claim 38, wherein the apparatus is operable such that the storage ~~[[resource]]~~ includes a bulletin board.

47. (Currently Amended) The apparatus as recited in claim 38, wherein the apparatus is operable such that the error notification is sent, when the storage ~~[[resource]]~~ included in the automotive electronic control unit is determined, in response to issuing the ~~storage-resource~~ request, to not be available and the ~~[[threshold]]~~value tracked since the issuance of the ~~storage-resource~~ request has been reached.

48. (Currently Amended) The apparatus as recited in claim 38, wherein the apparatus is operable such that the error notification is sent, when the storage ~~[[resource]]~~ included in the automotive electronic control unit is determined, in response to issuing the another ~~storage-resource~~ request, to not be available and the ~~[[threshold]]~~value tracked since the issuance of the ~~storage-resource~~ request has been reached.

49. (Currently Amended) The apparatus as recited in claim 38, wherein the apparatus is operable such that the error notification is sent, when the storage ~~[[resource]]~~ included in the automotive electronic control unit is determined, in response to issuing the ~~storage-resource~~ request and the another ~~storage-resource~~ request, to not be available and the ~~[[threshold]]~~value tracked since the issuance of the ~~storage-resource~~ request has been reached.

50. (Cancelled)

51. (Currently Amended) A ~~[[non-transitory]]~~non-volatile or volatile computer-readable medium of an automotive electronic control unit for storing a computer program product including code that, when executed by at least one hardware processor included in the automotive electronic control unit in communication with the ~~non-transitory~~ computer-readable medium, is for:

receiving sensor information associated with a message received utilizing a first network protocol associated with a first network;

in response to receiving the sensor information, issuing, by the at least one hardware processor and to a storage ~~[[resource]]~~ included in the automotive electronic control unit, a ~~storage-resource~~ request to access the storage ~~[[resource]]~~ included in the automotive electronic control unit, for determining whether the storage ~~[[resource]]~~ included in the automotive electronic control unit is available to store the sensor information;

determining whether a time-related ~~[[threshold]]~~value tracked after the issuance of the ~~storage-resource~~ request has been reached in association with the determination whether the storage ~~[[resource]]~~ is available;

when the storage ~~[[resource]]~~ included in the automotive electronic control unit is determined to not be available and the ~~[[threshold]]~~value associated with the determination whether the storage ~~[[resource]]~~ is available has not been reached, issuing, by the at least one hardware processor to the storage ~~[[resource]]~~ included in the automotive electronic control unit, another ~~storage-resource~~ request to access the storage ~~[[resource]]~~ included in the automotive electronic control unit to store the sensor information;

when the storage ~~[[resource]]~~ included in the automotive electronic control unit is determined to not be available and the ~~[[threshold]]~~value associated with determination whether the storage ~~[[resource]]~~ is available has been reached, ceasing repeating issuance of another ~~storage-resource~~ request; and

when the storage ~~[[resource]]~~ included in the automotive electronic control unit is determined to be available, storing the sensor information utilizing the storage ~~[[resource]]~~;

wherein the computer program product is operable such that the sensor information is capable of being ~~[[shared]]~~transmitted in less than one second utilizing the automotive electronic control unit that remains in hardwired communication with the first network and a second network.

52. (Currently Amended) The ~~non-transitory~~ computer-readable medium as recited in claim 51, wherein the computer program product is operable such that the sensor information reaches a destination on the second network in less than one second.

53. (Currently Amended) The ~~non-transitory~~ computer-readable medium as recited in claim 51, wherein the computer program product is operable such that the sensor information reaches a destination on the second network in less than a millisecond.

54. (Currently Amended) The ~~non-transitory~~ computer-readable medium as recited in claim 51, wherein the computer program product is operable such that a duration between the sensor information being received and the ~~[[sharing]]~~transmitting being completed is less than one second.

55. (Currently Amended) The ~~non-transitory~~ computer-readable medium as recited in claim 51, wherein the computer program product is operable such that a duration between the sensor information being received and the ~~[[sharing]]~~transmitting being completed is less than a millisecond, where the first network is one of a Controller Area Network, a Flexray network, or a Local Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.

56. (Currently Amended) The ~~non-transitory~~ computer-readable medium as recited in claim 51, wherein the computer program product is operable such that the ~~[[sharing]]~~transmitting of the sensor information is completed in less than a millisecond, where the first network is one of a Controller Area Network, a Flexray network, or a Local Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.

57. (Currently Amended) The ~~non-transitory~~ computer-readable medium as recited in claim 51, wherein the computer program product is configured for ~~[[sharing]]~~transmitting the sensor information in the form of automotive sensor data received via the first network for use in connection with an automotive device on the second network, in less than ~~[[the]]~~ one millisecond.

58. (New) The method as recited in claim 36, wherein at least one of:

- the storage includes volatile memory;
- the storage includes non-volatile memory;
- the storage includes a storage resource;
- the sensor information includes original data received from a sensor or derived data derived from original data received from the sensor;
- the value is time-related;
- the value is a timeout;
- the value includes a duration value;
- the value does not include a duration value;
- the value is configurable;

the value is a threshold;

the transmitting includes sharing;

the information is transmitted, with requiring storage of the information prior to the transmitting;

the information is transmitted, without a limitation that the information be transmitted without requiring storage of the information prior to the transmitting;

the determining whether the storage is available to store the sensor information, is not performed for a message in the automotive electronic control unit in conjunction with the message being received by the automotive electronic control unit;

the determining whether the storage is available to store the sensor information, is not performed for a message in the automotive electronic control unit;

the determining whether the storage is available to store the sensor information, is not performed in conjunction with the message being received by the automotive electronic control unit;

the request includes a storage resource request;

the issuing of the request, is not performed for a message in the automotive electronic control unit in conjunction with the message being received by the automotive electronic control unit;

the issuing of the request, is not performed for a message in the automotive electronic control unit;

the issuing of the request, is not performed for a message in the automotive electronic control unit, but rather for the information thereof; or

the issuing of the request, is not performed in conjunction with the message being received by the automotive electronic control unit.

Application No.: 17/387,988

Remarks:

The claims have been clarified.

Claims 31, 38 and 51 are rejected on the ground of non-statutory double patenting as being unpatentable over US9705765, US8566843, and 16/042,159. Applicant respectfully disagrees with this rejection. However, in the sole interest of expediting prosecution, a terminal disclaimer is submitted herewith, and this rejection is deemed avoided by virtue of such terminal disclaimer.

In the event a telephone conversation would expedite the prosecution of this application, applicant invites the Examiner to telephone the undersigned attorney at the number listed below. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 50-4964 (Order No. SVIPGP061J).

Respectfully submitted,



Dated: 09 Dec 2021
The Caldwell Firm, LLC
PO Box 59655
Dallas, Texas 75229-0655
Telephone: (214) 734-2313
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Patrick E. Caldwell, Esq.
Reg. No. 44,580

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed		PTO/SB/25 PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce
Electronic Petition Request	TERMINAL DISCLAIMER TO OBVIATE A PROVISIONAL DOUBLE PATENTING REJECTION OVER A PENDING "REFERENCE" APPLICATION AND TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	
Application Number	17387988	
Filing Date	28-Jul-2021	
First Named Inventor	Axel Fuchs	
Attorney Docket Number	SVIPGP061J	
Title of Invention	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK	
☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action ☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.		
Owner	Percent Interest	
Stragent, LLC	100 %	
The owner(s) of percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on pending reference Application Number(s)		
16042159 filed on 07/23/2018 as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the reference application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns. In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term of any patent granted on said reference application, "as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application," in the event that any such patent granted on the pending reference application: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.		
The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)		

8566843

9705765

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

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:

- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

☐ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

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

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

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

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

Registration Number 44580

☐ A sole inventor

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

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

Signature	/Patrick Caldwell/
Name	Patrick Caldwell

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

Doc Code: DISQ.E.FILE

Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 17387988

Filing Date: 28-Jul-2021

Applicant/Patent under Reexamination: Fuchs

Electronic Terminal Disclaimer filed on December 9, 2021

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt	
EFS ID:	44481873
Application Number:	17387988
International Application Number:	
Confirmation Number:	8451
Title of Invention:	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK
First Named Inventor/Applicant Name:	Axel Fuchs
Customer Number:	92045
Filer:	Patrick Edgar Caldwell
Filer Authorized By:	
Attorney Docket Number:	SVIPGP061J
Receipt Date:	09-DEC-2021
Filing Date:	28-JUL-2021
Time Stamp:	22:23:58
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	44141	no	2
			77cdbc4964633cfd106599a1d3af6ff5302e5c4f		

Warnings:

Information:	
Total Files Size (in bytes):	44141
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.	

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 17/387,988		Filing Date 07/28/2021		☐ To be Mailed				
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO												
APPLICATION AS FILED - PART I												
		(Column 1)	(Column 2)									
FOR		NUMBER FILED	NUMBER EXTRA		RATE (\$)		FEE (\$)					
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A		N/A							
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))		N/A	N/A		N/A							
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A		N/A							
TOTAL CLAIMS (37 CFR 1.16(j))		minus 20 =	*		x \$100 =							
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*		x \$480 =							
☐ 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	12/09/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)					
	Total (37 CFR 1.16(j))	* 28	Minus	** 30	= 0	x \$100 =	0					
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 4	= 0	x \$480 =	0					
	☐ Application Size Fee (37 CFR 1.16(s))											
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
						TOTAL ADD'L FEE		0				
AMENDMENT		(Column 1)	(Column 2)		(Column 3)							
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)					
	Total (37 CFR 1.16(j))	*	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".						/NICOLE LOVE HENSLEY/						
*** 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.**

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 17/387,988		Filing Date 07/28/2021		☐ To be Mailed					
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO													
APPLICATION AS FILED - PART I													
		(Column 1)	(Column 2)										
FOR		NUMBER FILED	NUMBER EXTRA		RATE (\$)		FEE (\$)						
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A		N/A								
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))		N/A	N/A		N/A								
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A		N/A								
TOTAL CLAIMS (37 CFR 1.16(j))		minus 20 =	*		x \$100 =								
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*		x \$480 =								
☐ 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	12/09/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)				
	Total (37 CFR 1.16(j))	* 27	Minus	** 30	= 0		x \$100 =		0				
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 4	= 0		x \$480 =		0				
	☐ Application Size Fee (37 CFR 1.16(s))												
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))												
								TOTAL ADD'L FEE		0			
AMENDMENT		(Column 1)	(Column 2)		(Column 3)								
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)				
	Total (37 CFR 1.16(j))	*	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.								SLIE					
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".								/KIMBERLY D COOPER/					
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/387,988	07/28/2021	Axel Fuchs	SVIPGP061J	8451
92045	7590	11/24/2021	EXAMINER	
The Caldwell Firm, LLC PO Box 59655 Dept. SVIPGP Dallas, TX 75229			ANYA, CHARLES E	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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DETAILED ACTION

1. Claims 30-57 are pending in this application.

Notice of Pre-AIA or AIA Status

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

Double Patenting

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

761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP § 2146 *et seq.* for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon

submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

2. Claims 31, 38 and 51 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1, 12 and 13 of U.S. Patent No. 9,705,765 B2 in view of U.S. Pub. No. 20030033067 A1 to Arita et al.

Instant Application No. 17,387,988	U.S. Pat. No. 9705765 B2
Claim 31: A system, comprising: an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for:	Claim 1: An apparatus, comprising: an automotive electronic control unit comprising a hardware and instructions for: identifying information associated with a message received utilizing a Controller Area Network protocol associated with a Controller Area Network;

receiving information associated with a message; in response to receiving the information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit to store the information and, in response to issuing the storage resource request, determining whether the storage resource is available to store the information; determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in	issuing a storage resource request in connection with a storage resource of the automotive electronic control unit and determining whether the storage resource is available for storing the information; determining whether a threshold has been reached in association with the storage resource request; in the event the storage resource is not available and the threshold associated with the storage resource request has not been reached, issuing another storage resource request in connection with the storage resource; in the event the storage resource is not available and the threshold associated with the storage resource request has been
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association with the threshold tracked since the issuance of the storage resource request; when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another	reached, sending a notification; in the event the storage resource is available, storing the information utilizing the storage resource; and sharing the information in less than one second utilizing a Flexray network protocol associated with a Flexray network, wherein the automotive electronic control unit remains in hardwired communication with the Controller Area Network and the Flexray network and includes: a first interface for interfacing with the Controller Area Network, the first interface including a first interface-related data link layer component for using Controller Area Network-related data link layer header bits and a first interface-related network
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storage resource request to access the storage resource included in the automotive electronic control unit to store the information; when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached, sending an error notification; and when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the	layer component for using Controller Area Network-related network layer header bits; and a second interface for interfacing with the Flexray network, the second interface including a second interface-related data link layer component for using Flexray network-related data link layer header bits and a second interface-related network layer component for using Flexray network-related network layer header bits.
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another storage resource request, to be available, storing the sensor information utilizing the storage resource.

Claim 38:

An apparatus, comprising: an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for: identifying information associated with a message received utilizing a first network protocol associated

Claim 12:

An apparatus, comprising: an automotive electronic control unit comprising a hardware and instructions for: receiving information associated with a message received utilizing a Controller Area Network protocol associated with a Controller Area Network; determining whether a storage resource is available; if the storage resource is not available, ascertaining whether a threshold

with a first network; in response to identifying the information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit to store the information and, in response to issuing the storage resource request, determining whether the storage resource is available to store the information; determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in association with the threshold	has been reached and re-trying an access in connection with the storage resource if the threshold has not been reached; if the threshold has been reached, sending an error notification; if the storage resource is available, storing the information utilizing the storage resource; and sharing the information utilizing a Flexray network protocol associated with a Flexray network; wherein the receiving, the determining, the storing, and the sharing all occur in less than one second; the automotive electronic control unit remains in hardwired communication with the Controller Area Network and the Flexray network; and the automotive
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tracked since the issuance of the storage resource request; in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access	electronic control unit includes: a first interface for interfacing with the Controller Area Network, the first interface including a first interface-related data link layer component for using Controller Area Network-related data link layer header bits and a first interface-related network layer component for using Controller Area Network-related network layer header bits; and a second interface for interfacing with the Flexray network, the second interface including a second interface-related data link layer component for using Flexray network-related data link layer header bits and a second interface-related network layer component for using Flexray network-related
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the storage resource included in the automotive electronic control unit to store the information; in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached, sending an error notification; and in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to be available, storing the information utilizing the storage resource; wherein the	network layer header bits; wherein the second interface-related network layer component uses the Flexray network-related network layer header bits by adding the Flexray network-related network layer header bits to a data unit including the information, and then the second interface-related data link layer component uses the Flexray network-related data link layer header bits by adding the Flexray network-related data link layer header bits to the data unit, before communicating the data unit on a physical link of the Flexray network; wherein the first interface-related data link layer component uses the Controller Area Network-related data link layer header bits
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apparatus is operable such that the sensor information is capable of being shared in less than one second utilizing a second network protocol associated with a second network, where the first network is one of a Controller Area Network, a Flexray network, or a Local Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network. Claim 51: A non-transitory computer-readable medium of an automotive electronic control unit for storing a computer program product	by removing the Controller Area Network-related data link layer header bits from another data unit, and the first interface-related network layer component uses the Controller Area Network-related network layer header bits by removing the Controller Area Network-related network layer header bits from the another data unit, where the information is extracted from the another data unit before the sharing. Claim 13: An apparatus, comprising: an automotive electronic control unit comprising a hardware and
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including code that, when executed by at least one hardware processor included in the automotive electronic control unit in communication with the non-transitory computer-readable medium, is for: receiving information associated with a message received utilizing a first network protocol associated with a first network; in response to receiving the sensor information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit, for determining whether the storage	instructions for: identifying information associated with a message received utilizing a Flexray network protocol associated with a Flexray network; issuing a storage resource request in connection with a storage resource of the automotive electronic control unit and determining whether the storage resource is available for storing the information; determining whether a threshold has been reached in association with the storage resource request; in the event the storage resource is not available and the threshold associated with the storage resource request has not been reached, issuing another storage resource request in
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resource included in the automotive electronic control unit is available to store the information; determining whether a time-related threshold tracked after the issuance of the storage resource request has been reached in association with the determination whether the storage resource is available; when the storage resource included in the automotive electronic control unit is determined to not be available and the threshold associated with the determination whether the storage resource is available has not been reached, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to	connection with the storage resource; in the event the storage resource is not available and the threshold associated with the storage resource request has been reached, sending a notification; in the event the storage resource is available, storing the information utilizing the storage resource; and sharing the information in less than one second utilizing a Controller Area Network protocol associated with a Controller Area Network, the automotive electronic control unit remaining in hardwired communication with the Flexray network and the Controller Area Network, and including: a first interface for interfacing with the Flexray network, the first interface
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access the storage resource included in the automotive electronic control unit to store the information; when the storage resource included in the automotive electronic control unit is determined to not be available and the threshold associated with determination whether the storage resource is available has been reached, ceasing repeating issuance of another storage resource request; and when the storage resource included in the automotive electronic control unit is determined to be available, storing the information utilizing the storage resource; wherein the computer program product is operable such that the information is capable of	including a first interface-related data link layer component for using Flexray network-related data link layer header bits and a first interface-related network layer component for using Flexray network-related network layer header bits; and a second interface for interfacing with the Controller Area Network, the second interface including a second interface-related data link layer component for using Controller Area Network-related data link layer header bits and a second interface-related network layer component for using Controller Area Network-related network layer header bits.
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being shared in less than one second utilizing the automotive electronic control unit that remains in hardwired communication with the first network and a second network.	
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Fuchs is silent with reference to is silent with reference to sensor information.

Arita teaches sensor information (“...**The ECU for storage 10 comprises an input circuit 2 to perform input processing of signals from a sensor, a switch and the like, a microcomputer 13 comprising a CPU 13a for performing various types of computing by capturing the signals from the input circuit 2, a ROM 13b and a RAM 13c, an output circuit 4 to perform signal output processing for driving an actuator based on the control signals computed in the microcomputer 13, a communication circuit 6 to perform processing for data communications with the other ECUs 11a-11e connected through the communication line 12, and a power circuit 5 for supplying stable**

electric power required for operations of the microcomputer 13 and the like...The ECU for storage 10 and each of the ECUs 11a-11e capture input signals from the sensor, switch and the like so as to perform various types of control processing to the actuator and the like, based on each control program previously stored in the ROM 13b, 14b, . . . of the microcomputer 13, 14, . . . , respectively, while by performing communications of data required for control with the other ECUs through the communication line 12 as necessary, the vehicle conditions are properly controlled..." paragraphs 0065/0070).

It would have been obvious to one of ordinary skill in the art before the effective filing date of the claim invention to modify the system of Fuchs with the teaching of Arita because the teaching of Arita would improve the system of Fuchs by providing a sensor for detecting and processing information for storage.

3. Claims 31, 38 and 51 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1, 47 and 48 of U.S. Patent No. 8,566,843 in view of U.S. Pub. No. 2003/0033067 A1 to Arita et al.

Instant Application No. 17/387,988	U.S. Pat. No. 8,566,843
Claim 31: A system, comprising: an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for: receiving information associated with a message; in response to receiving the information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access	Claim 1: A non-transitory computer-readable medium storing a computer program product for sharing information, the computer program product, comprising: code for allowing receipt of information associated with a message received utilizing a first network protocol associated with a first network; code for causing a determination as to whether a storage resource is available; code for determining whether a threshold has been reached and causing a request in connection with the storage resource if the threshold has not been reached; code for, in

the storage resource included in the automotive electronic control unit to store the information and, in response to issuing the storage resource request, determining whether the storage resource is available to store the information; determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request; when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not	the event the threshold has been reached, causing an error notification to be sent; code for, in the event the storage resource is available, causing storage of the information utilizing the storage resource; and code for causing the information to be shared by: in real-time, sharing the information utilizing at least one message format corresponding to a second network protocol associated with a second network; wherein the computer program product is associated with an electronic control unit with a plurality of interface portions including: a first interface portion for interfacing with the first network, the first interface portion including a first interface-
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be available and the threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the information; when the storage resource included in the automotive electronic control unit is	related first layer part for receiving first interface-related first layer messages and a first interface-related second layer part, the computer program product being operable such that the first interface-related first layer messages are processed after which first interface-related second layer messages are provided, where the first network is at least one of a Controller Area Network type, a Flexray network type, or a Local Interconnect Network type; and a second interface portion for interfacing with the second network, the second interface portion including a second interface-related first layer part for receiving second interface-related first layer
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determined, in response to issuing the storage resource request or the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached, sending an error notification; and when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to be available, storing the information utilizing the storage resource. Claim 38:	messages and a second interface-related second layer part, the computer program product being operable such that the second interface-related first layer messages are processed after which second interface-related second layer messages are provided, where the second network is at least one of the Controller Area Network type, the Flexray network type, or the Local Interconnect Network type. Claim 47:
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An apparatus, comprising: an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for: identifying information associated with a message received utilizing a first network protocol associated with a first network; in response to identifying the information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the	A method for sharing information, the method comprising: allowing receipt of information associated with a message received utilizing a first network protocol associated with a first network; causing a determination as to whether a storage resource is available; determining whether a threshold has been reached and causing a request in connection with the storage resource if the threshold has not been reached; in the event the threshold has been reached, causing an error notification to be sent; in the event the storage resource is available, causing storage of the information utilizing the storage resource; and causing the information to be shared by: in
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automotive electronic control unit to store the information and, in response to issuing the storage resource request, determining whether the storage resource is available to store the sensor information; determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request; in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not be available and the	real-time, sharing the information; wherein the method is associated with an electronic control unit with a plurality of interface portions including: a first interface portion for interfacing with the first network, the first interface portion including a first interface-related first layer part for receiving first interface-related first layer messages and a first interface-related second layer part, the first interface-related first layer messages being processed after which first interface-related second layer messages are provided, where the first network is at least one of a Controller Area Network, a Flexray network, or a Local Interconnect Network; and a second interface portion, the
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threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the information; in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the another storage resource	second interface portion including a second interface-related part for receiving second interface-related messages, the second interface-related messages being processed after which processed second interface-related messages are provided.
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request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached, sending an error notification; and in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to be available, storing the information utilizing the storage resource; wherein the apparatus is operable such that the information is capable of being shared in less than one second utilizing a second network protocol associated with a second network, where the first network is one of a Controller Area Network, a Flexray

network, or a Local Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.

Claim 51:

A non-transitory computer-readable medium of an automotive electronic control unit for storing a computer program product including code that, when executed by at least one hardware processor included in the automotive electronic control unit in communication with the non-transitory computer-readable medium, is for: receiving information associated with a

Claim 48:

A non-transitory computer-readable medium storing a computer program product for sharing information, the computer program product comprising: code for receiving information associated with a message received utilizing a first network protocol associated with a first network; code for issuing a storage resource request in connection with a storage resource for determining whether the storage

message received utilizing a first network protocol associated with a first network; in response to receiving the information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit, for determining whether the storage resource included in the automotive electronic control unit is available to store the information; determining whether a time-related threshold tracked after the issuance of the storage resource request has been reached in association with the determination whether the storage	resource is available; code for determining whether a threshold has been reached in association with the determination whether the storage resource is available; code for, when the storage resource is not available and the threshold associated with the determination whether the storage resource is available has not been reached, issuing another storage resource request in connection with the storage resource; code for, when the storage resource is not available and the threshold associated with determination whether the storage resource is available has been reached, sending a notification; and code for, when the storage resource is
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resource is available; when the storage resource included in the automotive electronic control unit is determined to not be available and the threshold associated with the determination whether the storage resource is available has not been reached, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the information; when the storage resource included in the automotive electronic control unit is determined to not be available and the threshold associated with	available, storing the information utilizing the storage resource; wherein the computer program product is operable such that the information is capable of being shared in real-time utilizing a control unit that includes a plurality of interfaces including: a first interface for interfacing with the first network, the first interface including a first interface-related first component for receiving first data units and a first interface-related second component, the computer program product being operable such that the first data units are processed after which processed first data units are provided, where the first network is at least one of a Controller Area Network, a Flexray
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determination whether the storage resource is available has been reached, ceasing repeating issuance of another storage resource request; and when the storage resource included in the automotive electronic control unit is determined to be available, storing the information utilizing the storage resource; wherein the computer program product is operable such that the information is capable of being shared in less than one second utilizing the automotive electronic control unit that remains in hardwired communication with the first network and a second network.	network, or a Local Interconnect Network; and a second interface, the second interface including a second interface-related component for receiving second data units, the computer program product being operable such that the second data units are processed after which processed second data units are provided.
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Fuchs is silent with reference to is silent with reference to sensor information.

Arita teaches sensor information ("...**The ECU for storage 10 comprises an input circuit 2 to perform input processing of signals from a sensor, a switch and the like, a microcomputer 13 comprising a CPU 13a for performing various types of computing by capturing the signals from the input circuit 2, a ROM 13b and a RAM 13c, an output circuit 4 to perform signal output processing for driving an actuator based on the control signals computed in the microcomputer 13, a communication circuit 6 to perform processing for data communications with the other ECUs 11a-11e connected through the communication line 12, and a power circuit 5 for supplying stable electric power required for operations of the microcomputer 13 and the like...The ECU for storage 10 and each of the ECUs 11a-11e capture input signals from the sensor, switch and the like so as to perform various types of control processing to the actuator and the like, based on each control program previously stored in the ROM 13b, 14b, . . . of the microcomputer 13, 14, . . . , respectively, while by performing communications of data required for control with the**

other ECUs through the communication line 12 as necessary, the vehicle conditions are properly controlled..." paragraphs 0065/0070).

It would have been obvious to one of ordinary skill in the art before the effective filing date of the claim invention to modify the system of Fuchs with the teaching of Arita because the teaching of Arita would improve the system of Fuchs by providing a sensor for detecting and processing information for storage.

4. Claims 31, 38 and 51 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1, 8 and 14 of copending Application No. 16/042,159 in view of U.S. Pub. No. 2003/0033067 A1 to Arita et al.

This is a provisional nonstatutory double patenting rejection.

Instant Application No. 17/387,988	U.S. Application No. 16/042,159
Claim 31: A system, comprising: an automotive electronic control unit including a memory storage	Claim 1: A system, comprising: an automotive electronic control unit configured for: receiving information

comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for: receiving information associated with a message; in response to receiving the information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit to store the information and, in response to issuing the storage resource request, determining whether the storage resource is	associated with a message; issuing a storage resource request in connection with a storage resource and determining whether the storage resource is available; determining whether a threshold has been reached in association with the storage resource request; when the storage resource is not available and the threshold associated with the storage resource request has not been reached, issuing another storage resource request in connection with the storage resource; when the storage resource is not available and the threshold associated with the storage resource request has been reached, sending a notification; and when the storage
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available to store the sensor information; determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request; when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been	resource is available, storing the information utilizing the storage resource; wherein the automotive electronic control unit is operable such that the information is capable of being shared in less than one second, and the automotive electronic control unit includes a plurality of interfaces including: a first interface; and a second interface for interfacing with a network, the second interface including a second interface-related data link layer component for using network-related data link layer header bits and a second interface-related network layer component for using network-related network layer header bits, where the network is at least one of a
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available in association with the threshold tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the information; when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to not be available and the threshold tracked since the	Controller Area Network, a Flexray network, or a Local Interconnect Network.
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issuance of the storage resource request has been reached, sending an error notification; and when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to be available, storing the sensor information utilizing the storage resource.	
Claim 38: An apparatus, comprising: an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in	Claim 8: An apparatus, comprising: an automotive electronic control unit configured for: identifying information associated with a message received utilizing a first

hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for: identifying information associated with a message received utilizing a first network protocol associated with a first network; in response to identifying the information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit to store the information and, in response to issuing the storage resource request, determining whether the storage resource is	network protocol associated with a first network; issuing a storage resource request in connection with a storage resource and determining whether the storage resource is available; determining whether a threshold has been reached in association with the storage resource request; in the event the storage resource is not available and the threshold associated with the storage resource request has not been reached, issuing another storage resource request in connection with the storage resource; in the event the storage resource is not available and the threshold associated with the storage resource request has been reached, sending a notification; and
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available to store the information; determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request; in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been available in association with the threshold	in the event the storage resource is available, storing the information utilizing the storage resource; wherein the apparatus is operable such that the information is capable of being shared in less than one second utilizing a second network protocol associated with a second network, and the automotive electronic control unit remains in hardwired communication with the first network and the second network and includes: a first interface for interfacing with the first network, the first interface including a first interface-related data link layer component for using first network-related data link layer header bits and a first interface- related network layer component
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tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the information; in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached, sending an error notification; and in the event the storage resource included	for using first network-related network layer header bits, where the first network is at least one of a Controller Area Network type, a Flexray network type, or a Local Interconnect Network type; and a second interface for interfacing with the second network, the second interface including a second interface-related data link layer component for using second network-related data link layer header bits and a second interface-related network layer component for using second network-related network layer header bits, where the second network is at least one of the Controller Area Network type, the Flexray network type, or the Local Interconnect Network type.
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in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to be available, storing the sensor information utilizing the storage resource; wherein the apparatus is operable such that the sensor information is capable of being shared in less than one second utilizing a second network protocol associated with a second network, where the first network is one of a Controller Area Network, a Flexray network, or a Local Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.	
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Claim 51: A non-transitory computer-readable medium of an automotive electronic control unit for storing a computer program product including code that, when executed by at least one hardware processor included in the automotive electronic control unit in communication with the non-transitory computer-readable medium, is for: receiving information associated with a message received utilizing a first network protocol associated with a first network; in response to receiving the information, issuing, by the at least one hardware processor and to a storage resource included in the automotive	Claim 14: A non-transitory computer-readable medium storing a computer program product for sharing information, the computer program product comprising: code for receiving information associated with a message received utilizing a first network protocol associated with a first network; code for issuing a storage resource request in connection with a storage resource for determining whether the storage resource is available; code for determining whether a threshold has been reached in association with the determination whether the storage resource is available; code for, when the storage resource is not available and the threshold
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electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit, for determining whether the storage resource included in the automotive electronic control unit is available to store the information; determining whether a time-related threshold tracked after the issuance of the storage resource request has been reached in association with the determination whether the storage resource is available; when the storage resource included in the automotive electronic control unit is determined to not be available and the threshold associated with the determination whether the storage resource is available has not been	associated with the determination whether the storage resource is available has not been reached, issuing another storage resource request in connection with the storage resource; code for, when the storage resource is not available and the threshold associated with determination whether the storage resource is available has been reached, sending a notification; and code for, when the storage resource is available, storing the information utilizing the storage resource; wherein the computer program product is operable such that the information is capable of being shared in less than one second utilizing an automotive electronic
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reached, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the information; when the storage resource included in the automotive electronic control unit is determined to not be available and the threshold associated with determination whether the storage resource is available has been reached, ceasing repeating issuance of another storage resource request; and when the storage resource included in the automotive electronic control unit is	control unit that remains in hardwired communication with the first network and a second network, and that includes a plurality of interfaces including: a first interface for interfacing with the first network, the first interface including a first interface-related data link layer component for using first network-related data link layer header bits and a first interface-related network layer component for using first network-related network layer header bits, where the first network is at least one of a Controller Area Network, a Flexray network, or a Local Interconnect Network; and a second interface, the second interface including a second interface-related data link layer
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determined to be available, storing the information utilizing the storage resource; wherein the computer program product is operable such that the information is capable of being shared in less than one second utilizing the automotive electronic control unit that remains in hardwired communication with the first network and a second network.	component for using second network-related data link layer header bits.
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Fuchs is silent with reference to is silent with reference to sensor information.

Arita teaches sensor information (“...**The ECU for storage 10 comprises an input circuit 2 to perform input processing of signals from a sensor, a switch and the like, a microcomputer 13 comprising a CPU 13a for performing various types of computing by capturing**

the signals from the input circuit 2, a ROM 13b and a RAM 13c, an output circuit 4 to perform signal output processing for driving an actuator based on the control signals computed in the microcomputer 13, a communication circuit 6 to perform processing for data communications with the other ECUs 11a-11e connected through the communication line 12, and a power circuit 5 for supplying stable electric power required for operations of the microcomputer 13 and the like...The ECU for storage 10 and each of the ECUs 11a-11e capture input signals from the sensor, switch and the like so as to perform various types of control processing to the actuator and the like, based on each control program previously stored in the ROM 13b, 14b, . . . of the microcomputer 13, 14, . . . , respectively, while by performing communications of data required for control with the other ECUs through the communication line 12 as necessary, the vehicle conditions are properly controlled..." paragraphs 0065/0070).

It would have been obvious to one of ordinary skill in the art before the effective filing date of the claim invention to modify the system of Fuchs with the teaching of Arita because the teaching of Arita would improve the system of Fuchs by providing a sensor for detecting and processing information for storage.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES E ANYA whose telephone number is (571)272-3757. The examiner can normally be reached Mon-Fir. 9-6pm.

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, Dennis Chow can be reached on 571-272-7767. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit:

<https://patentcenter.uspto.gov>. Visit

<https://www.uspto.gov/patents/apply/patent-center> for more information

about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHARLES E ANYA/
Primary Examiner, Art Unit 2194

<i>Notice of References Cited</i>	Application/Control No. 17/387,988		Applicant(s)/Patent Under Reexamination Fuchs et al.	
	Examiner CHARLES E ANYA		Art Unit 2194	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-20030033067-A1	02-2003	Arita, Hiroshi	B60R16/0315	701/48
	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	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
PTO-892 (Rev. 01-2001)

Notice of References Cited

Part of Paper No. 20211118

<i>Index of Claims</i> 	Application/Control No. 17/387,988	Applicant(s)/Patent Under Reexamination Fuchs et al.
	Examiner CHARLES E ANYA	Art Unit 2194

✓	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	11/19/2021								
	1	-								
	2	-								
	3	-								
	4	-								
	5	-								
	6	-								
	7	-								
	8	-								
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	37	✓								
	38	✓								
	39	✓								
	40	✓								
	41	✓								
	42	✓								

<i>Index of Claims</i> 	Application/Control No. 17/387,988	Applicant(s)/Patent Under Reexamination Fuchs et al.
	Examiner CHARLES E ANYA	Art Unit 2194

CLAIM		DATE								
Final	Original	11/19/2021								
	43	✓								
	44	✓								
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	46	✓								
	47	✓								
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	49	✓								
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	51	✓								
	52	✓								
	53	✓								
	54	✓								
	55	✓								
	56	✓								
	57	✓								

<i>Search Notes</i> 	Application/Control No. 17/387,988	Applicant(s)/Patent Under Reexamination Fuchs et al.
	Examiner CHARLES E ANYA	Art Unit 2194

CPC - Searched*		
Symbol	Date	Examiner

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
The group/subgroup search is limited by text search	11/19/2021	ca
Inventor Search	11/19/2021	ca
IP.Com Search	11/19/2021	ca
Google Scholar Search	11/19/2021	ca
WEST (G06F9/542 G06F9/545 G06F9/546 H04L43/10 H04L67/10 B60R16/0231)	11/19/2021	ca

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

/CHARLES E ANYA/ Primary Examiner, Art Unit 2194	
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<i>Search Notes</i> 	Application/Control No. 17/387,988	Applicant(s)/Patent Under Reexamination Fuchs et al.
	Examiner CHARLES E ANYA	Art Unit 2194

/CHARLES E ANYA/ Primary Examiner, Art Unit 2194	
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WEST Search History for Application 17387988

Creation Date: 2021111910:39

Interference Searches

Query	DB	Hits	Op.	Plur.	Thes.	Date
(((((G06F9/542)))))) (((((G06F9/545)))))) (((((G06F9/546)))))) (((((H04L43/10)))))) (((((H04L67/10)))))) (((((B60R16/0231)))))).cpc.	PGPB	35037	OR	YES		11-19-2021
(bb or bulletin adj board or storage) with availab \$ 6 with sensor	PGPB	2923	OR	YES		11-19-2021
((bb or bulletin adj board or storage) with availab \$ 6 with sensor) and (((((G06F9/542)))))) (((((G06F9/545)))))) (((((G06F9/546)))))) (((((H04L43/10)))))) (((((H04L67/10)))))) (((((B60R16/0231)))))).cpc.)	PGPB	152	OR	YES		11-19-2021
((bb or bulletin adj board or storage) with availab \$ 6 with sensor and (((((G06F9/542)))))) (((((G06F9/545)))))) (((((G06F9/546)))))) (((((H04L43/10)))))) (((((H04L67/10)))))) (((((B60R16/0231)))))).cpc.) and @ ad < 20021217	PGPB	0	OR	YES		11-19-2021
(request \$ 3 call invocation invok \$ 3 query \$ 3 message) with (sensor with resource)	PGPB	1813	OR	YES		11-19-2021
((request \$ 3 call invocation invok \$ 3 query \$ 3 message) with (sensor with resource)) and (((((G06F9/542)))))) (((((G06F9/545)))))) (((((G06F9/546)))))) (((((H04L43/10)))))) (((((H04L67/10)))))) (((((B60R16/0231)))))).cpc.)	PGPB	115	OR	YES		11-19-2021
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(request \$ 3 or messag \$ 3 or query \$ 3) with (storage memory) with ((timer or time \$ 1out or watchdog) and availab \$ 6)	PGPB	753	OR	YES		11-19-2021
	PGPB	33	OR	YES		11-19-2021

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((request \$ 3 or messag \$ 3 or query \$ 3) with (storage memory) with ((timer or time \$ 1out or watchdog) and availab \$ 6) and (((((((((G06F9/542)))))))) (((((((((G06F9/545)))))))) (((((((((G06F9/546)))))))) (((((((((H04L43/10)))))))) (((((((((H04L67/10)))))))) (((((((((B60R16/0231))))))))).cpc.) and @ ad < 20021217	PGPB	0	OR	YES		11-19-2021
(motor or vehicle or automobile or automotive or ecu) with storage with sensor	PGPB	19048	OR	YES		11-19-2021
((motor or vehicle or automobile or automotive or ecu) with storage with sensor) and storage with availab \$ 6	PGPB	2264	OR	YES		11-19-2021
((motor or vehicle or automobile or automotive or ecu) with storage with sensor and storage with availab \$ 6) and @ ad < 20021217	PGPB	48	OR	YES		11-19-2021

Prior Art Searches

Query	DB	Hits	Op.	Plur.	Thes.	Date
("20030223436" "5202887" "5469150" "5794164" "6292862" "6625169" "6657252" "6871250" "6934612").PN.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	26	OR	YES		11-19-2021
10248477.PN.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	6	OR	YES		11-19-2021
10031790.pn.	PGPB, USPT, USOC, EPAB,	4	OR	YES		11-19-2021

	JPAB, DWPI, TDBD					
10002036.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	4	OR	YES		11-19-2021
9575817.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	2	OR	YES		11-19-2021
8566843.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	2	OR	YES		11-19-2021
8209705.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	3	OR	YES		11-19-2021
7802263.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	10	OR	YES		11-19-2021
10031790.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	4	OR	YES		11-19-2021
100020360.pn.		0	OR	YES		11-19-2021

	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD					
10020360.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	7	OR	YES		11-19-2021
100020360.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	0	OR	YES		11-19-2021
10002036.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	4	OR	YES		11-19-2021
9575817.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	2	OR	YES		11-19-2021
8566843.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	2	OR	YES		11-19-2021
8209705.pn.	PGPB, USPT, USOC, EPAB,	3	OR	YES		11-19-2021

Prior Art Searches

4

	JPAB, DWPI, TDBD					
7802263.pn.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	10	OR	YES		11-19-2021
"FUCHS-AXEL"!	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	61	OR	YES		11-19-2021
"FUCHS-AXEL"!	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	61	OR	YES		11-19-2021
"ANDREWS-SCOTT-STURGES"!	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	26	OR	YES		11-19-2021
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((request or message or query) and (storage near availab\$6)).ab, ti.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	898	OR	YES		11-19-2021
		84	OR	YES		11-19-2021

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((bulletin near board or "bb") and ((request or message or query) and (storage near availab\$6)).ab, ti.) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	10	OR	YES		11-19-2021
(bulletin near board or "bb").ab, ti.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	40638	OR	YES		11-19-2021
(bb or bulletin adj board or storage) with availab\$6	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	444645	OR	YES		11-19-2021
((bulletin near board or "bb").ab, ti.) and ((bb or bulletin adj board or storage) with availab\$6)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	419	OR	YES		11-19-2021
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((request or message or query) and (storage near availab\$6)).ab, ti.) and ((bb or bulletin adj board or storage) with availab\$6 and (motor or vehicle or automobile or automotive or ecu) and @ad<20021217)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	3	OR	YES		11-19-2021
((bb or bulletin adj board or storage) with availab\$6 and (motor or vehicle or automobile or automotive or ecu) and @ad<20021217) and ((((((((G06F9/542)))))))) ((((((((G06F9/545)))))))) ((((((((G06F9/546)))))))) ((((((((H04L43/10)))))))) ((((((((H04L67/10)))))))) ((((((((B60R16/0231))))))))).cpc.)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	63	OR	YES		11-19-2021
(shared or common) near memory with (timer or time\$1out or watchdog)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	724	OR	YES		11-19-2021
((shared or common) near memory with (timer or time\$1out or watchdog)) and @ad<20021217	PGPB, USPT, USOC, EPAB,	217	OR	YES		11-19-2021

	JPAB, DWPI, TDBD					
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(request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$1out or watchdog)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	128	OR	YES		11-19-2021
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(direct adj memory adj access or dma) with (timer or time\$1out)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	6395	OR	YES		11-19-2021
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		74	OR	YES		11-19-2021

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availab\$7 with (timer or time\$1out or watchdog)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	29427	OR	YES		11-19-2021
(availab\$7 with (timer or time\$1out or watchdog)) and (shared or common) near memory	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	1442	OR	YES		11-19-2021
(availab\$7 with (timer or time\$1out or watchdog) and (shared or common) near memory) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	371	OR	YES		11-19-2021
(availab\$7 with (timer or time\$1out or watchdog) and (shared or common) near memory and @ad<20021217) and (request\$3 or messag\$3 or (shared or common) near	PGPB, USPT, USOC, EPAB,	116	OR	YES		11-19-2021

memory) with (storing or sav\$3)	JPAB, DWPI, TDBD					
(request\$3 or messag\$3 or query\$3) with (shared or common) near memory with ((timer or time\$1out or watchdog) and availab\$6)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	18	OR	YES		11-19-2021
(request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$1out or watchdog)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	128	OR	YES		11-19-2021
((request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$1out or watchdog)) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	31	OR	YES		11-19-2021
(shared or common) near memory with availab\$6	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	7005	OR	YES		11-19-2021
((shared or common) near memory with availab\$6) and (motor or vehicle or automobile or automotive or ecu)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	702	OR	YES		11-19-2021
((shared or common) near memory with availab\$6 and (motor or vehicle or automobile or automotive or ecu)) and ((((((((G06F9/542)))))))) ((((((((G06F9/545)))))))) ((((((((G06F9/546)))))))) ((((((((H04L43/10)))))))) ((((((((H04L67/10))))))))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	40	OR	YES		11-19-2021

(((((((((B60R16/0231)))))))))).cpc.)						
((shared or common) near memory with availab\$6 and (motor or vehicle or automobile or automotive or ecu) and ((((((((G06F9/542)))))))) ((((((((G06F9/545)))))))) ((((((((G06F9/546)))))))) ((((((((H04L43/10)))))))) ((((((((H04L67/10)))))))) ((((((((B60R16/0231))))))))).cpc.) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	1	OR	YES		11-19-2021
((((((((G06F9/542)))))))) ((((((((G06F9/545)))))))) ((((((((G06F9/546)))))))) ((((((((H04L43/10)))))))) ((((((((H04L67/10)))))))) ((((((((B60R16/0231))))))))).cpc.	PGPB	35037	OR	YES		11-19-2021
(bb or bulletin adj board or storage or((shared or common) near memory)) with availab\$6	PGPB	216126	OR	YES		11-19-2021
((((((((G06F9/542)))))))) ((((((((G06F9/545)))))))) ((((((((G06F9/546)))))))) ((((((((H04L43/10)))))))) ((((((((H04L67/10)))))))) ((((((((B60R16/0231))))))))).cpc.) and ((bb or bulletin adj board or storage or((shared or common) near memory)) with availab\$6)	PGPB	5947	OR	YES		11-19-2021
((((((((G06F9/542)))))))) ((((((((G06F9/545)))))))) ((((((((G06F9/546)))))))) ((((((((H04L43/10)))))))) ((((((((H04L67/10)))))))) ((((((((B60R16/0231))))))))).cpc. and (bb or bulletin adj board or storage or((shared or common) near memory)) with availab\$6) and (motor or vehicle or automobile or automotive or ecu)	PGPB	1693	OR	YES		11-19-2021
((((((((G06F9/542)))))))) ((((((((G06F9/545)))))))) ((((((((G06F9/546)))))))) ((((((((H04L43/10)))))))) ((((((((H04L67/10)))))))) ((((((((B60R16/0231))))))))).cpc. and (bb or bulletin adj board or storage or((shared or common) near memory)) with availab\$6 and (motor or vehicle or automobile or automotive	PGPB	17	OR	YES		11-19-2021

or ecu)) and @ad<20021217						
(5941947 5230051 5388189 5513324 5737529 5923846 6128315 6185466 6430607 6438632 6941510 6363427 6725348 7950017 5265250 5666485).pn.	USPT	16	OR	YES		11-19-2021
20010018685 20020032856 20020191543 20020002586 20020047868 20030154116 20030236894 20030088568 20020198943 20020159460 20020188691 20030061388 20030074474 20040003087 20060155907 20060155867 20070101206 20100333096 20110047218 20110047310 20120029898 20130111299	PGPB	24	OR	YES		11-19-2021
20020073243	PGPB	2	OR	YES		11-19-2021
(7552410 5956489 6289390 6378001 6801942 6034970 7103045 7103646 7103656 5588002).pn.	USPT	10	OR	YES		11-19-2021
(6141710 6484082 7552440).pn.	USPT	3	OR	YES		11-19-2021
((5941947 5230051 5388189 5513324 5737529 5923846 6128315 6185466 6430607 6438632 6941510 6363427 6725348 7950017 5265250 5666485).pn.) or (20010018685 20020032856 20020191543 20020002586 20020047868 20030154116 20030236894 20030088568 20020198943 20020159460 20020188691 20030061388 20030074474 20040003087 20060155907 20060155867 20070101206 20100333096 20110047218 20110047310 20120029898 20130111299) or (20020073243) or ((7552410 5956489 6289390 6378001 6801942 6034970 7103045 7103646 7103656 5588002).pn.) or ((6141710 6484082 7552440).pn.)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	55	OR	YES		11-19-2021
((5941947 5230051 5388189 5513324 5737529 5923846 6128315 6185466 6430607 6438632 6941510 6363427 6725348 7950017 5265250 5666485).pn. or 20010018685 20020032856 20020191543 20020002586 20020047868 20030154116 20030236894 20030088568 20020198943 20020159460 20020188691 20030061388 20030074474 20040003087 20060155907 20060155867 20070101206 20100333096 20110047218 20110047310 20120029898 20130111299 or 20020073243 or (7552410 5956489 6289390 6378001 6801942 6034970 7103045 7103646 7103656 5588002).pn. or (6141710 6484082 7552440).pn.) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	43	OR	YES		11-19-2021

(shared or common) near memory with (timer or time\$1out or watchdog)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	724	OR	YES		11-19-2021
((shared or common) near memory with (timer or time\$1out or watchdog)) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	217	OR	YES		11-19-2021
((shared or common) near memory with (timer or time\$1out or watchdog) and @ad<20021217) and (request\$3 or messag\$3) with (storing or sav\$3)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	41	OR	YES		11-19-2021
(request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$1out or watchdog)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	128	OR	YES		11-19-2021
((request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$1out or watchdog)) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	31	OR	YES		11-19-2021
(direct adj memory adj access or dma) with (timer or time\$1out)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	6395	OR	YES		11-19-2021
((direct adj memory adj access or dma) with (timer or time\$1out)) and (shared or common) near memory with (request\$3 or memory or access\$3)	PGPB, USPT, USOC, EPAB,	835	OR	YES		11-19-2021

	JPAB, DWPI, TDBD					
((direct adj memory adj access or dma) with (timer or time\$1out) and (shared or common) near memory with (request\$3 or memory or access\$3)) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	317	OR	YES		11-19-2021
((direct adj memory adj access or dma) with (timer or time\$1out) and (shared or common) near memory with (request\$3 or memory or access\$3) and @ad<20021217) and (request\$3 or messag\$3 or (shared or common) near memory) with (storing or sav\$3)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	74	OR	YES		11-19-2021
(shared or common) near memory with ((timer or time\$1out or watchdog) and availab\$6)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	125	OR	YES		11-19-2021
((shared or common) near memory with ((timer or time\$1out or watchdog) and availab\$6)) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	27	OR	YES		11-19-2021
availab\$7 with (timer or time\$1out or watchdog)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	29427	OR	YES		11-19-2021
(availab\$7 with (timer or time\$1out or watchdog)) and (shared or common) near memory	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	1442	OR	YES		11-19-2021
		371	OR	YES		11-19-2021

(availab\$7 with (timer or time\$1out or watchdog) and (shared or common) near memory) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD					
(availab\$7 with (timer or time\$1out or watchdog) and (shared or common) near memory and @ad<20021217) and (request\$3 or messag\$3 or (shared or common) near memory) with (storing or sav\$3)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	116	OR	YES		11-19-2021
(request\$3 or messag\$3 or query\$3) with (shared or common) near memory with ((timer or time\$1out or watchdog) and availab\$6)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	18	OR	YES		11-19-2021
(request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$1out or watchdog)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	128	OR	YES		11-19-2021
((request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$1out or watchdog)) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	31	OR	YES		11-19-2021
((((((((((G06F9/542)))))))))) ((((((((G06F9/545)))))))) ((((((((G06F9/546)))))))) ((((((((H04L43/10)))))))) ((((((((H04L67/10)))))))) ((((((((B60R16/0231))))))))).cpc.	PGPB	35037	OR	YES		11-19-2021
((((((((((G06F9/542)))))))))) ((((((((G06F9/545)))))))) ((((((((G06F9/546)))))))) ((((((((H04L43/10)))))))) ((((((((H04L67/10))))))))	PGPB	2	OR	YES		11-19-2021

((((((((B60R16/0231)))))))).cpc.) and (request\$3 or messag\$3 or query\$3) with (shared or common) near memory with (timer or time\$1out or watchdog)						
((((((((G06F9/542)))))) ((((((((G06F9/545)))))) ((((((((G06F9/546)))))) ((((((((H04L43/10)))))) ((((((((H04L67/10)))))) ((((((((B60R16/0231)))))))).cpc.) and (motor or vehicle or automobile or automotive or ecu)	PGPB	8212	OR	YES		11-19-2021
((((((((G06F9/542)))))) ((((((((G06F9/545)))))) ((((((((G06F9/546)))))) ((((((((H04L43/10)))))) ((((((((H04L67/10)))))) ((((((((B60R16/0231)))))))).cpc. and (motor or vehicle or automobile or automotive or ecu) and (request\$3 or messag\$3) with (storing or sav\$3)	PGPB	1613	OR	YES		11-19-2021
((((((((G06F9/542)))))) ((((((((G06F9/545)))))) ((((((((G06F9/546)))))) ((((((((H04L43/10)))))) ((((((((H04L67/10)))))) ((((((((B60R16/0231)))))))).cpc. and (motor or vehicle or automobile or automotive or ecu) and (request\$3 or messag\$3) with (storing or sav\$3)) and (shared or common) near memory	PGPB	151	OR	YES		11-19-2021
((((((((G06F9/542)))))) ((((((((G06F9/545)))))) ((((((((G06F9/546)))))) ((((((((H04L43/10)))))) ((((((((H04L67/10)))))) ((((((((B60R16/0231)))))))).cpc. and (motor or vehicle or automobile or automotive or ecu) and (request\$3 or messag\$3) with (storing or sav\$3) and (shared or common) near memory) and @ad<20021217	PGPB	4	OR	YES		11-19-2021
((((((((G06F9/542)))))) ((((((((G06F9/545)))))) ((((((((G06F9/546)))))) ((((((((H04L43/10)))))) ((((((((H04L67/10)))))) ((((((((B60R16/0231)))))))).cpc.) and (bb or bulletin adj board or storage or((shared or common) near memory)) with availab\$6	PGPB	5947	OR	YES		11-19-2021

((((((((G06F9/542))))))))) ((((((((G06F9/545))))))))) ((((((((G06F9/546))))))))) ((((((((H04L43/10))))))))) ((((((((H04L67/10))))))))) ((((((((B60R16/0231)))))))).cpc.) and (bb or bulletin adj board or storage or ((shared or common) near memory)) with availab\$6	PGPB	5947	OR	YES		11-19-2021
((((((((G06F9/542))))))))) ((((((((G06F9/545))))))))) ((((((((G06F9/546))))))))) ((((((((H04L43/10))))))))) ((((((((H04L67/10))))))))) ((((((((B60R16/0231)))))))).cpc. and (bb or bulletin adj board or storage or ((shared or common) near memory)) with availab\$6) and @ad<20021217	PGPB	136	OR	YES		11-19-2021
((((((((G06F9/542))))))))) ((((((((G06F9/545))))))))) ((((((((G06F9/546))))))))) ((((((((H04L43/10))))))))) ((((((((H04L67/10))))))))) ((((((((B60R16/0231)))))))).cpc. and (bb or bulletin adj board or storage or ((shared or common) near memory)) with availab\$6 and @ad<20021217) and (motor or vehicle or automobile or automotive or ecu)	PGPB	17	OR	YES		11-19-2021
((((((((G06F9/542))))))))) ((((((((G06F9/545))))))))) ((((((((G06F9/546))))))))) ((((((((H04L43/10))))))))) ((((((((H04L67/10))))))))) ((((((((B60R16/0231)))))))).cpc.) and (request\$3 or messag\$3 or (shared or common) near memory) with (storing or sav\$3)	PGPB	7638	OR	YES		11-19-2021
((((((((G06F9/542))))))))) ((((((((G06F9/545))))))))) ((((((((G06F9/546))))))))) ((((((((H04L43/10))))))))) ((((((((H04L67/10))))))))) ((((((((B60R16/0231)))))))).cpc. and (request\$3 or messag\$3 or (shared or common) near memory) with (storing or sav\$3)) and (motor or vehicle or automobile or automotive or ecu)	PGPB	1628	OR	YES		11-19-2021
((((((((G06F9/542))))))))) ((((((((G06F9/545)))))))))	PGPB	5793	OR	YES		11-19-2021

((((((((G06F9/546))))))))) ((((((((H04L43/10))))))))) ((((((((H04L67/10))))))))) ((((((((B60R16/0231)))))))).cpc.) and (bb or bulletin adj board or storage) with availab\$6						
((((((((G06F9/542))))))))) ((((((((G06F9/545))))))))) ((((((((G06F9/546))))))))) ((((((((H04L43/10))))))))) ((((((((H04L67/10))))))))) ((((((((B60R16/0231)))))))).cpc. and (bb or bulletin adj board or storage) with availab\$6) and (motor or vehicle or automobile or automotive or ecu)	PGPB	1680	OR	YES		11-19-2021
((((((((G06F9/542))))))))) ((((((((G06F9/545))))))))) ((((((((G06F9/546))))))))) ((((((((H04L43/10))))))))) ((((((((H04L67/10))))))))) ((((((((B60R16/0231)))))))).cpc. and (bb or bulletin adj board or storage) with availab\$6 and (motor or vehicle or automobile or automotive or ecu)) and @ad<20021217	PGPB	17	OR	YES		11-19-2021
("20020073243" "20020124007" "5588002" "5854454" "5956489" "6034970" "6141710" "6289390" "6378001" "6484082" "6801942" "7103045" "7103646" "7103656" "7552440").PN.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	45	OR	YES		11-19-2021
(("20020073243" "20020124007" "5588002" "5854454" "5956489" "6034970" "6141710" "6289390" "6378001" "6484082" "6801942" "7103045" "7103646" "7103656" "7552440").PN.) and (motor or vehicle or automobile or automotive or ecu)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	17	OR	YES		11-19-2021
(("20020073243" "20020124007" "5588002" "5854454" "5956489" "6034970" "6141710" "6289390" "6378001" "6484082" "6801942" "7103045" "7103646" "7103656" "7552440").PN. and (motor or vehicle or automobile or automotive or ecu)) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	16	OR	YES		11-19-2021
(("20020073243" "20020124007" "5588002" "5854454" "5956489" "6034970"	PGPB, USPT,	1	OR	YES		11-19-2021

"6141710" "6289390" "6378001" "6484082" "6801942" "7103045" "7103646" "7103656" "7552440").PN.) and (bb or bulletin adj board or storage) with availab\$6	USOC, EPAB, JPAB, DWPI, TDBD					
((("20020073243" "20020124007" "5588002" "5854454" "5956489" "6034970" "6141710" "6289390" "6378001" "6484082" "6801942" "7103045" "7103646" "7103656" "7552440").PN.) and (shared or common) near memory with (request\$3 or memory or access\$3)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	6	OR	YES		11-19-2021
((("20020073243" "20020124007" "5588002" "5854454" "5956489" "6034970" "6141710" "6289390" "6378001" "6484082" "6801942" "7103045" "7103646" "7103656" "7552440").PN. and (shared or common) near memory with (request\$3 or memory or access\$3)) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	6	OR	YES		11-19-2021
(acu automotive adj control adj unit) with sensor	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	418	OR	YES		11-19-2021
((acu automotive adj control adj unit) with sensor) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	36	OR	YES		11-19-2021
(acu automotive adj control adj unit) with (request\$3 call invocation invok\$3 query\$3 message) with resource	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	39	OR	YES		11-19-2021
((acu automotive adj control adj unit) with (request\$3 call invocation invok\$3 query\$3 message) with resource) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB,	12	OR	YES		11-19-2021

	DWPI, TDBD					
("20030040881" "20030043739" "4099255" "6434459").PN.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	10	OR	YES		11-19-2021
("10002036" "10031790" "10248477" "7802263" "8209705" "8566843" "9575817" "9705765").PN.	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	39	OR	YES		11-19-2021
(("10002036" "10031790" "10248477" "7802263" "8209705" "8566843" "9575817" "9705765").PN.) ("20030040881" "20030043739" "4099255" "6434459").PN.)) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	32	OR	YES		11-19-2021
((("10002036" "10031790" "10248477" "7802263" "8209705" "8566843" "9575817" "9705765").PN. ("20030040881" "20030043739" "4099255" "6434459").PN.) and @ad<20021217) and (request\$3 call invocation invok\$3 query\$3 message) with resource	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	0	OR	YES		11-19-2021
(request\$3 call invocation invok\$3 query\$3 message) with (sensor and resource)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	17552	OR	YES		11-19-2021
(request\$3 call invocation invok\$3 query\$3 message) with (sensor with resource)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	3252	OR	YES		11-19-2021
((request\$3 call invocation invok\$3 query\$3 message) with (sensor with resource)) and (acu	PGPB, USPT,	3	OR	YES		11-19-2021

automotive adj control adj unit)	USOC, EPAB, JPAB, DWPI, TDBD					
(request\$3 call invocation invok\$3 query\$3 message) with (bb or bulletin adj board or storage) with availab\$6	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	40367	OR	YES		11-19-2021
((request\$3 call invocation invok\$3 query\$3 message) with (bb or bulletin adj board or storage) with availab\$6) and ((request\$3 call invocation invok\$3 query\$3 message) with (sensor and resource))	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	1089	OR	YES		11-19-2021
((request\$3 call invocation invok\$3 query\$3 message) with (bb or bulletin adj board or storage) with availab\$6 and (request\$3 call invocation invok\$3 query\$3 message) with (sensor and resource)) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	15	OR	YES		11-19-2021
(bb or bulletin adj board or storage) with availab\$6 with sensor	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	5460	OR	YES		11-19-2021
((bb or bulletin adj board or storage) with availab\$6 with sensor) and (motor or vehicle or automobile or automotive or ecu)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD	3707	OR	YES		11-19-2021
((bb or bulletin adj board or storage) with availab\$6 with sensor and (motor or vehicle or automobile or automotive or ecu)) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI,	240	OR	YES		11-19-2021

	TDBD					
(motor or vehicle or automobile or automotive or ecu) with availab\$6 with storage with sensor	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	547	OR	YES		11-19-2021
((motor or vehicle or automobile or automotive or ecu) with availab\$6 with storage with sensor) and @ad<20021217	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	25	OR	YES		11-19-2021
(determin\$3 request\$3 message) with availab\$6 with storage with sensor	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	1279	OR	YES		11-19-2021
((determin\$3 request\$3 message) with availab\$6 with storage with sensor) and (vehicle automobile automotive ecu)	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	761	OR	YES		11-19-2021
((determin\$3 request\$3 message) with availab\$6 with storage with sensor and (vehicle automobile automotive ecu)) and (vehicle automobile automotive ecu) with sensor	PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD, FPRS	567	OR	YES		11-19-2021
((determin\$3 request\$3 message) with availab\$6 with storage with sensor and (vehicle automobile automotive ecu) and (vehicle automobile automotive ecu) with sensor) and ((request or message or query) and (storage	PGPB, USPT, USOC, EPAB, JPAB,	1	OR	YES		11-19-2021

near availab\$6)).ab, ti.	DWPI, TDBD, FPRS					
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Urban runoff quality management by real-time control

W Schilling - Urban Runoff Pollution, 1986 - Springer

... Designed to produce a peak of 1000 **cars** per day, it produces at most times only about 50 **cars** ... A DOC system requires wiring between all **sensors** to the **computer** and back to all ... (namely the second) for which the **available storage** volume is mobilized with maximum success. ...

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M Alnuaimar, M Fasih - ... on the Frontiers and Advances in ..., 2017 - ieeexplore.ieee.org

... The IoT is a network of physical devices, **vehicles** and other items which are embedded with **sensors**, software and network connectivity ... Undoubtedly, this data exceeds the **available storage** constraints. Also, **sensors** are mostly embedded in applications that require real time ...

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Optimal content prefetching in NDN **vehicle**-to-infrastructure scenario

G Mauri, M Gerla, F Bruno, M Cesana... - IEEE Transactions on ..., 2016 - ieeexplore.ieee.org

... We give an ILP formulation of the problem of optimally distributing content in the network nodes while accounting for the **available storage** capacity and the available link capacity. The optimization framework is then leveraged to evaluate the impact on content retrievability of ...

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A new V2G control strategy for load factor improvement using smoothing technique

P Chanhom, S Nuiers, N Hatti - ... in Electrical and Computer ..., 2017 - search.proquest.com

... • **Available storage** capacity for storing or delivering power: **available storage** capacity of the ... of electric **vehicles** have been available in the market ie, fuel cell electric **vehicles** (FCEVs), ... other items embedded with electronics, software, **sensors**, and network connectivity (the so-...

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An opportunistic data dissemination for autonomous **vehicles** communication

A Abbas, M Krichen, R Alroobaea, S Malebary, U Tariq... - Soft Computing, 2021 - Springer

... (2018) address the **vehicles'** storage and transmitting capacity to improve vehicular **sensor** networks' data dissemination rate. The ... Sequential request processing is granted by exploiting the **available storage** to improve the rate of processing, reduce delay, and confine request ...

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Highway electrification and automation

SE Shladover - 1992 - [escholarship.org](#)

... overcomes the energy storage limitations of the **available storage** batteries, it is not immune to ... , the magnetic **sensors** to go on the **vehicle**, and the control **computer** and its software. The ... good ride comfort in an internal combustion **engine vehicle**. The accuracy is high enough in ...

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Metadata: The future of information systems

KG Jeffery - Information Systems Engineering: State of the art and ... , 2000 - Citeseer

... The range of **available storage**, user interface and computing devices is increasing so ... and human-readable and those who wish to make it more formal and **computer**-readable; ... robots, specialised visualisation and VR systems, data **sensors** and detectors (eg on satellites) to ...

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Relevance

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None

1 - 50

9,834,469 results

1

System, method and computer program product for sharing information in a distributed framework

A system, method and computer program product are provided for receiving information associated with a message, issuing a storage resource request in connection with a storage resource and determining whether the storage resource is available. In use, the information is capable of being shared in...

CURRENT ASSIGNEES: STRAGENT LLC
US16031790 | US PATENTS | 24-JUL-2018

2

System, method and computer program product for sharing information in a distributed framework

A system, method and computer program product are provided for receiving information associated with a message, issuing a storage resource request in connection with a storage resource and determining whether the storage resource is available. In use, the information is capable of being shared in...

CURRENT ASSIGNEES: STRAGENT LLC
US20180203749 | US APPLICATIONS | 19-JUL-2018

3

Result #28



Bibliographic Data

Application No: 17/387,988

Foreign Priority claimed: ☐ Yes ☒ No

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

Verified and Acknowledged:

/CHARLES E ANYA/

Examiner's Signature

Initials

Title:

SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT
FOR SHARING INFORMATION IN A DISTRIBUTED
FRAMEWORK

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
07/28/2021	719	2194	
RULE			

APPLICANTS

Stragent LLC, Longview, TX,

INVENTORS

Axel Fuchs, Richmond, CA, UNITED STATES

Scott Sturges Andrews, Petaluma, CA, UNITED STATES

CONTINUING DATA

This application is a CON of 16042159 07/23/2018 PAT 11188400

16042159 is a CON of 15919201 03/12/2018 PAT 10031790

15919201 is a CON of 15405110 01/12/2017 PAT 10002036

15405110 is a CON of 14011705 08/27/2013 PAT 9575817

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13531319 is a CON of 12182570 07/30/2008 PAT 8209705

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10737690 has PRO of 60434018 12/17/2002

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

08/11/2021

STATE OR COUNTRY

UNITED STATES

ADDRESS

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\$7,640



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/387,988	07/28/2021	Axel Fuchs	SVIPGP061J

CONFIRMATION NO. 8451

92045

The Caldwell Firm, LLC

PO Box 59655

Dept. SVIPGP

Dallas, TX 75229

PUBLICATION NOTICE



OC000000129895112

Title:SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK

Publication No.US-2021-0357276-A1

Publication Date:11/18/2021

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



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/387,988	07/28/2021	Axel Fuchs	SVIPGP061J	8451
92045	7590	10/22/2021	EXAMINER	
The Caldwell Firm, LLC PO Box 59655 Dept. SVIPGP Dallas, TX 75229			CENTRAL, DOCKET	
			ART UNIT	PAPER NUMBER
			OPAP	
			NOTIFICATION DATE	DELIVERY MODE
			10/22/2021	ELECTRONIC

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

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

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

caldwelldocketing@gmail.com
eofficeaction@appcoll.com
pcaldwell@thecaldwellfirm.com

<i>Decision Granting Request for Prioritized Examination (Track I)</i>	Application No. 17/387,988	Applicant(s) Fuchs et al.	
	Examiner IRVIN DINGLE	Art Unit OPET	AIA (FITF) Status No
1. THE REQUEST FILED <u>28 July 2021</u> IS GRANTED . The above-identified application has met the requirements for prioritized examination A. ☒ for an original nonprovisional application (Track I). B. ☐ for an application undergoing continued examination (RCE). 2. The above-identified application will undergo prioritized examination. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs: A. filing a <u>petition for extension of time</u> to extend the time period for filing a reply; B. filing an <u>amendment to amend the application to contain more than four independent claims, more than thirty total claims</u>, or a multiple dependent claim; C. filing a <u>request for continued examination</u> ; D. filing a notice of appeal; E. filing a request for suspension of action; F. mailing of a notice of allowance; G. mailing of a final Office action; H. completion of examination as defined in 37 CFR 41.102; or I. abandonment of the application. Telephone inquiries with regard to this decision should be directed to IRVIN DINGLE at (571)272-3210. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.			
/IRVIN DINGLE/ Lead Paralegal Specialist, OPET			

Electronic Acknowledgement Receipt	
EFS ID:	43986618
Application Number:	17387988
International Application Number:	
Confirmation Number:	8451
Title of Invention:	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK
First Named Inventor/Applicant Name:	Axel Fuchs
Customer Number:	92045
Filer:	Patrick Edgar Caldwell
Filer Authorized By:	
Attorney Docket Number:	SVIPGP061J
Receipt Date:	08-OCT-2021
Filing Date:	28-JUL-2021
Time Stamp:	14:54:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Preliminary Amendment	SVIPGP061J_PreliminaryAmendment_vF_08-Oct-2021.pdf	82605 05eebaa9f3c30d0e6577dcb54189fd04a644a708	no	11

Warnings:

Information:	
Total Files Size (in bytes):	82605
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Confirmation No.: 8451
Axel Fuchs	Examiner: Docket CENTRAL
Application No.: 17/387,988	Art Unit: OPAP
File Date: 2021-07-28	Docket No.: SVIPGP061J
Title: SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK	Date: Oct 08, 2021

PRELIMINARY AMENDMENT

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

Examiner:

Prior to substantive examination of the above patent application, please enter the following amendments.

Amendments to the Claims:

The listing of amended claims follow:

1.-30. (Cancelled)

31. (New) A system, comprising:

an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for:

receiving sensor information associated with a message;

in response to receiving the sensor information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information and, in response to issuing the storage resource request, determining whether the storage resource is available to store the sensor information;

determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request;

when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource included in the automotive

electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information;

when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached, sending an error notification; and

when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to be available, storing the sensor information utilizing the storage resource.

32. (New) The system as recited in claim 31, wherein the system is operable such that the sensor information reaches a destination in less than one second.

33. (New) The system as recited in claim 31, wherein the system is operable such that the sensor information reaches a destination in less than a millisecond.

34. (New) The system as recited in claim 31, wherein the system is operable such that a duration between the sensor information being received and being shared is less than one second.

35. (New) The system as recited in claim 31, wherein the system is operable such that a duration between the sensor information being received and the sharing being completed is less than a millisecond.

36. (New) The system as recited in claim 31, wherein the system is operable such that the sensor information is shared in less than a millisecond.

37. (New) The system as recited in claim 31, wherein the system is configured for sharing automotive sensor data between heterogeneous networks including at least one of a Controller Area Network, a Flexray network, or a Local Interconnect Network.

38. (New) An apparatus, comprising:

an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for:

identifying sensor information associated with a message received utilizing a first network protocol associated with a first network;

in response to identifying the sensor information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information and, in response to issuing the storage resource request, determining whether the storage resource is available to store the sensor information;

determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request;

in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not be

available and the threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information;

in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached, sending an error notification; and

in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to be available, storing the sensor information utilizing the storage resource;

wherein the apparatus is operable such that the sensor information is capable of being shared in less than one second utilizing a second network protocol associated with a second network, where the first network is one of a Controller Area Network, a Flexray network, or a Local Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.

39. (New) The apparatus as recited in claim 38, wherein the apparatus is operable such that network layer translation is capable of being avoided.

40. (New) The apparatus as recited in claim 38, wherein the apparatus is configured for sharing automotive sensor data received via the first network for use in connection with an automotive device on the second network, in less than the one second.

41. (New) The apparatus as recited in claim 38, wherein the apparatus is configured for sharing automotive sensor data received via the first network for use in connection with an automotive actuator on the second network, in less than a millisecond.

42. (New) The apparatus as recited in claim 38, wherein the apparatus is operable such that the storage resource request and the another storage resource request are identical.

43. (New) The apparatus as recited in claim 38, wherein the apparatus is operable such that the storage resource request and the another storage resource request are the same.

44. (New) The apparatus as recited in claim 38, wherein the apparatus is operable such that the sensor information excludes all header bits of the message.

45. (New) The apparatus as recited in claim 38, wherein the apparatus is operable such that the sensor information excludes at least a portion of any header bits of the message.

46. (New) The apparatus as recited in claim 38, wherein the apparatus is operable such that the storage resource includes a bulletin board.

47. (New) The apparatus as recited in claim 38, wherein the apparatus is operable such that the error notification is sent, when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached.

48. (New) The apparatus as recited in claim 38, wherein the apparatus is operable such that the error notification is sent, when the storage resource included in the automotive electronic control unit is determined, in response to issuing the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached.

49. (New) The apparatus as recited in claim 38, wherein the apparatus is operable such that the error notification is sent, when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request and the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached.

50. (New) The apparatus as recited in claim 38, wherein at least one of:

the memory storage includes the storage resource;

the memory storage does not include the storage resource;

the storage resource is part of the memory storage;

the storage resource is not part of the memory storage;

the sensor information includes original data received from a sensor or derived data derived from original data received from the sensor;

the threshold is time-related;

the threshold is a timeout;

the threshold includes a duration threshold;

the threshold does not include a duration threshold;

the threshold is configurable;

the storage resource included in the automotive electronic control unit is determined to be available, when automotive electronic control unit gets the storage resource;

the storage resource included in the automotive electronic control unit is determined to be available, when automotive electronic control unit gets access to the storage resource;

the storage resource included in the automotive electronic control unit is determined to be not available, when automotive electronic control unit does not get the storage resource; or

the storage resource included in the automotive electronic control unit is determined to be not available, when automotive electronic control unit does not get access to the storage resource.

51. (New) A non-transitory computer-readable medium of an automotive electronic control unit for storing a computer program product including code that, when executed by at least one hardware processor included in the automotive electronic control unit in communication with the non-transitory computer-readable medium, is for:

receiving sensor information associated with a message received utilizing a first network protocol associated with a first network;

in response to receiving the sensor information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic

control unit, for determining whether the storage resource included in the automotive electronic control unit is available to store the sensor information;

determining whether a time-related threshold tracked after the issuance of the storage resource request has been reached in association with the determination whether the storage resource is available;

when the storage resource included in the automotive electronic control unit is determined to not be available and the threshold associated with the determination whether the storage resource is available has not been reached, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information;

when the storage resource included in the automotive electronic control unit is determined to not be available and the threshold associated with determination whether the storage resource is available has been reached, ceasing repeating issuance of another storage resource request; and

when the storage resource included in the automotive electronic control unit is determined to be available, storing the sensor information utilizing the storage resource;

wherein the computer program product is operable such that the sensor information is capable of being shared in less than one second utilizing the automotive electronic control unit that remains in hardwired communication with the first network and a second network.

52. (New) The non-transitory computer-readable medium as recited in claim 51, wherein the computer program product is operable such that the sensor information reaches a destination on the second network in less than one second.

53. (New) The non-transitory computer-readable medium as recited in claim 51, wherein the computer program product is operable such that the sensor information reaches a destination on the second network in less than a millisecond.

54. (New) The non-transitory computer-readable medium as recited in claim 51, wherein the computer program product is operable such that a duration between the sensor information being received and the sharing being completed is less than one second.

55. (New) The non-transitory computer-readable medium as recited in claim 51, wherein the computer program product is operable such that a duration between the sensor information being received and the sharing being completed is less than a millisecond, where the first network is one of a Controller Area Network, a Flexray network, or a Local Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.

56. (New) The non-transitory computer-readable medium as recited in claim 51, wherein the computer program product is operable such that the sharing of the sensor information is completed in less than a millisecond, where the first network is one of a Controller Area Network, a Flexray network, or a Local Interconnect Network, and the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.

57. (New) The non-transitory computer-readable medium as recited in claim 51, wherein the computer program product is configured for sharing the sensor information in the form of automotive sensor data received via the first network for use in connection with an automotive device on the second network, in less than the one millisecond.

Application No.: 17/387,988
Date: Oct 08, 2021
Preliminary Amendment

Remarks:

The claims of the present patent application have been amended to clarify what is being claimed. No new matter has been added. It should be noted that no claims are intended to be construed under 35 U.S.C. 112, paragraph 6.(New)

In the event a telephone conversation would expedite the prosecution of this application, applicant invites the Examiner to telephone the undersigned attorney at the number listed below. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 50-4964 (Order No. SVIPGP061J).

Respectfully submitted,



Dated: 08 Oct 2021
The Caldwell Firm, LLC
PO Box 59655
Dallas, Texas 75229-0655
Telephone: (214) 734-2313
pcaldwell@thecaldwellfirm.com

Patrick E. Caldwell, Esq.
Reg. No. 44,580

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 17/387,988		Filing Date 07/28/2021		☐ To be Mailed	
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO									
APPLICATION AS FILED - PART I									
	(Column 1)	(Column 2)							
FOR	NUMBER FILED	NUMBER EXTRA			RATE (\$)			FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =	*			x \$100 =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*			x \$480 =				
☐ 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	10/08/2021	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(j))	* 27	Minus ** 30	= 0		x \$100 =		0	
	Independent (37 CFR 1.16(h))	* 3	Minus *** 4	= 0		x \$480 =		0	
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE		0	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(j))	*	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.						LDRC			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/EVA V GILLIS/			
*** 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.**

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 17/387,988				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	700			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800			
TOTAL CLAIMS (37 CFR 1.16(i))	30	minus 20 = *	10			x 100 =	1000			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4	minus 3 = *	1			x 480 =	480			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL		TOTAL	3300			
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=		x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=		x	=
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE			TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=		x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=		x	=
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE			TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.										



UNITED STATES PATENT AND TRADEMARK OFFICE

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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
17/387,988	07/28/2021		3300	SVIPGP061J	30	4

CONFIRMATION NO. 8451

FILING RECEIPT



0000000127651439

92045
The Caldwell Firm, LLC
PO Box 59655
Dept. SVIPGP
Dallas, TX 75229

Date Mailed: 08/13/2021

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Axel Fuchs, Richmond, CA;
Scott Sturges Andrews, Petaluma, CA;

Applicant(s)

Stragent LLC, Longview, TX;

Power of Attorney: The patent practitioners associated with Customer Number 92045

Domestic Priority data as claimed by applicant

This application is a CON of 16/042,159 07/23/2018
which is a CON of 15/919,201 03/12/2018 PAT 10031790
which is a CON of 15/405,110 01/12/2017 PAT 10002036
which is a CON of 14/011,705 08/27/2013 PAT 9575817
which is a CON of 13/531,319 06/22/2012 PAT 8566843
which is a CON of 12/182,570 07/30/2008 PAT 8209705
which is a CON of 10/737,690 12/15/2003 PAT 7802263
which claims benefit of 60/434,018 12/17/2002

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: 08/11/2021

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/387,988**

Projected Publication Date: 11/18/2021

Non-Publication Request: No

Early Publication Request: No

Title

SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN
A DISTRIBUTED FRAMEWORK

Preliminary Class

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

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

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

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

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

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

NOT GRANTED

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

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor

community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

SCORE Placeholder Sheet for IFW Content

Application Number: 17387988

Document Date: 07/28/2021

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

- Drawing

At the time of document entry (noted above):

- USPTO employees may access SCORE content via DAV or via the SCORE web page.
- External customers may access SCORE content via PAIR using the Supplemental Content tab.

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:

92045

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):

Stragent LLC

☐ 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 /Andrew Gordon/

Date (Optional) 2020-05-26

Name Andrew Gordon

Title Exec VP

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

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

**CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION
UNDER 37 CFR 1.102(e)** (Page 1 of 1)

First Named Inventor:	Axel Fuchs	Nonprovisional Application Number (if known):	
Title of Invention:	SYSTEM, METHOD METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently \$0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.
2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.
3. The applicable box is checked below:
 - I. ☒ **Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)**
 - i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.
---OR---
 - (b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.
 - ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, or the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.
 - II. ☐ **Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)**
 - i. A request for continued examination has been filed with, or prior to, this form.
 - ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
 - iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
 - iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
 - v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature <u>/Patrick Caldwell/</u>	Date <u>28 Jul 2021</u>
Name (Print/Typed) <u>Patrick Caldwell</u>	Practitioner Registration Number <u>44580</u>
Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.*	
☐ *Total of _____ forms are submitted.	

Privacy Act Statement

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

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

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

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, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK
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As the below named inventor, I hereby declare that:

This declaration is directed to: ☒ The attached application, or
☐ United States application or PCT international application number _____
filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Scott Sturges Andrews 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.

Privacy Act Statement

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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 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.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ filed on _____ The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.	
LEGAL NAME OF INVENTOR Inventor: <u>Axel Fuchs</u> Date (Optional): _____ Signature: <u></u>	
Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		
First Named Inventor/Applicant Name:		Axel Fuchs		
Filer:		Patrick Edgar Caldwell		
Attorney Docket Number:		SVIPGP061J		
Filed as Large Entity				
Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	320	320
UTILITY SEARCH FEE	1111	1	700	700
UTILITY EXAMINATION FEE	1311	1	800	800
REQUEST FOR PRIORITIZED EXAMINATION	1817	1	4200	4200
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	10	100	1000
INDEPENDENT CLAIMS IN EXCESS OF 3	1201	1	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous-Filing:				
PROCESSING FEE, EXCEPT PROV. APPLS.	1830	1	140	140
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				7640

Electronic Acknowledgement Receipt	
EFS ID:	43372796
Application Number:	17387988
International Application Number:	
Confirmation Number:	8451
Title of Invention:	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK
First Named Inventor/Applicant Name:	Axel Fuchs
Customer Number:	92045
Filer:	Patrick Edgar Caldwell
Filer Authorized By:	
Attorney Docket Number:	SVIPGP061J
Receipt Date:	28-JUL-2021
Filing Date:	
Time Stamp:	23:14:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$7640
RAM confirmation Number	E20217RN14323821
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	Application Data Sheet	SVIPGP061J_ADS_vF_28-Jul-2021.pdf	1874190	no	9
			c609b852e0c35b176124aec8c473a98ec868b338		
Warnings:					
Information:					
2		SVIPGP061J_Application_vF_28-Jul-2021.pdf	150652	yes	40
			3fead5234669fa55fa3762e29674c3e03307b14f		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	27	
	Claims		28	39	
	Abstract		40	40	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	SVIPGP061J_Drawings_vF_28-Jul-2021.pdf	2834956	no	17
			fbcbf95c224387888c9b6cb1791b5d3bec1c8d7d		
Warnings:					
Information:					
4	Power of Attorney	SVIPGP061J_POA.pdf	196235	no	1
			0dc4686d2c30f5dbdf598ddf86b0a60d6b639713		
Warnings:					
Information:					
5	TrackOne Request	SVIPGP061J_TRK1_vF_28-Jul-2021.pdf	129278	no	2
			ba9da734b4646c07bdfb7b6af8c263689fd8eb51		

Warnings:					
Information:					
6	Oath or Declaration filed	SVIPGP061x_Declaration_Andr ews_signed.pdf	172848	no	2
			8bea19de0d4f6484d0db36c0ba59e71e9a03dc13		
Warnings:					
Information:					
7	Oath or Declaration filed	SVIPGP061x_Declaration_Fuch s_signed_vR.pdf	712283	no	1
			8c124ead53c1ab098bc06bfb08dbda171ce650f6		
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	53180	no	2
			ab495768259556431db9fd914fa337a95cd5dc9		
Warnings:					
Information:					
Total Files Size (in bytes):			6123622		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SVIPGP061J
		Application Number	
Title of Invention	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		
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		
	▼ Axel		Fuchs		▼	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service						
City	Richmond	State/Province	CA	Country of Residence	US	
Mailing Address of Inventor:						
Address 1	1297 Sanderling Island					
Address 2						
City	Richmond	State/Province	CA			
Postal Code	94801	Country	US			
Inventor	2				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	▼ Scott	Sturges	Andrews		▼	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service						
City	Petaluma	State/Province	CA	Country of Residence	US	
Mailing Address of Inventor:						
Address 1	704 Paula Lane					
Address 2						
City	Petaluma	State/Province	CA			
Postal Code	94952	Country	US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SVIPGP061J
		Application Number	
Title of Invention	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		

☐ An Address is being provided for the correspondence information of this application.

Customer Number	92045		
Email Address	pcaldwell@thecaldwellfirm.com	Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		
Attorney Docket Number	SVIPGP061J	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)		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	92045		

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SVIPGP061J
		Application Number	
Title of Invention	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		

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 of		16042159	2018-07-23		
Prior Application Status		Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)	
16042159	Continuation of	15919201	2018-03-12	10031790	2018-07-24	
Prior Application Status		Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)	
15919201	Continuation of	15405110	2017-01-12	10002036	2018-06-19	
Prior Application Status		Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)	
15405110	Continuation of	14011705	2013-08-27	9575817	2017-02-21	
Prior Application Status		Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)	
14011705	Continuation of	13531319	2012-06-22	8566843	2013-10-22	
Prior Application Status		Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)	
13531319	Continuation of	12182570	2008-07-30	8209705	2012-06-26	
Prior Application Status		Patented	Remove			
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)	
12182570	Continuation of	10737690	2003-12-15	7802263	2010-09-21	
Prior Application Status		Expired	Remove			
Application Number	Continuity Type		Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
10737690	Claims benefit of provisional		60434018	2002-12-17		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.						
Add						

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SVIPGP061J
		Application Number	
Title of Invention	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		

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).

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

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

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

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

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SVIPGP061J
		Application Number	
Title of Invention	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		

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	SVIPGP061J
		Application Number	
Title of Invention	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		

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	Stragent LLC		
Mailing Address Information For Applicant:			
Address 1	211 W Tyler St., Suite C		
Address 2			
City	Longview	State/Province	TX
Country	US	Postal Code	75601
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button. Add			

Assignee Information including Non-Applicant Assignee Information:

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SVIPGP061J
		Application Number	
Title of Invention	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		

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:

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	/Patrick Caldwell/		Date (YYYY-MM-DD)	2021-07-28
First Name	Patrick	Last Name	Caldwell	Registration Number
				44580
Additional Signature may be generated within this form by selecting the Add button.				Add

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	SVIPGP061J
		Application Number	
Title of Invention	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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

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

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

SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR SHARING INFORMATION IN A DISTRIBUTED FRAMEWORK

RELATED APPLICATION(S)

5 This application is a continuation of U.S. Patent Application No. 16/042,159 filed
07/23/2018, which is a continuation of U.S. Patent Application No. 15/919,201 filed
03-12-2018, now U.S. Patent No. 10,031,790, which is a continuation of U.S. Patent
Application No. 15/405,110 filed 01-12-2017, now U.S. Patent No. 10,002,036,
which is continuation of U.S. Patent Application No. 14/011,705 filed 08-27-2013,
10 now U.S. Patent No. 9,575,817, which is a continuation of U.S. Patent Application
No. 13/531,319 filed 6/22/2012, now U.S. Patent No. 8,566,843, which is a
continuation of U.S. Patent Application No. 12/182,570 filed 07/30/2008, now U.S.
Patent No. 8,209,705, which is a continuation of U.S. Patent Application No.
10/737,690 filed 12/15/2003, now U.S. Patent No. 7,802,263, which, in turn, claims
15 priority under 35 U.S.C. §119 based on U.S. Provisional Application No. 60/434,018
filed 12/17/2002, all of which are incorporated herein by reference.

FIELD AND BACKGROUND OF THE INVENTION

20

The present invention relates to the field of distributed control and monitoring
systems that may include certain temporal behavior.

Such technology may optionally apply to electronic vehicle communication and
25 control systems, real-time monitoring systems, industrial automation and control
systems, as well as any other desired system.

SUMMARY OF THE INVENTION

5 A system, method and computer program product are provided for sharing information in a distributed system. After information is received, it is stored on a bulletin board. In use, the information is shared, in real-time, among a plurality of heterogeneous processes.

10 In one embodiment, both past and present instances of the information may be stored on the bulletin board. As an option, the information may be replicated among a plurality of the bulletin boards. Optionally, first information may be processed utilizing a first bulletin board and stored utilizing a second bulletin board. Still yet, the bulletin boards may be hierarchical.

15 In another embodiment, the processes may access multiple sections of the bulletin board. Further, the bulletin board may send notifications to the processes based on a state of the information on the bulletin board.

20 Optionally, the information may include variables. For example, the information may include input variables, output variables, etc. Moreover, the processes may include local processes, remote processes, etc. Still yet, the processes may include event triggered processes and/or time triggered processes. In use, each of the processes may process the information in a manner that is isolated from temporal characteristics associated with the network.

25 In still another embodiment, the information may be extracted from a message received by a bulletin board manager. Moreover, the information may be converted from a signal received by a bulletin board manager. Even still, the information may be shared in a single task, may be shared according to a schedule, and/or may be
30 shared with an operating system. Optionally, dynamic preemptive scheduling may be provided. Also, the information may be shared across the communication

network with only a portion of a message header that is needed for a specific communication link while other communication links may use a different message header.

- 5 As a further option, resources in the network may be protected. Specifically, the resources in the network may be protected utilizing a schedule that allows information sharing utilizing the bulletin board. In another embodiment, the resources in the network may be protected utilizing semaphores.
- 10 In even still another embodiment, the information may be shared according to an internal clock, an external clock, etc. During operation, objects may be generated based on a change of state of the information stored in the bulletin board. Such objects may include, but are not limited to flags, events, signals, interrupts, etc. Still yet, the information may be stored in response to interrupts associated with the
- 15 processes.

In use, the bulletin board may update the processes with information at a first rate that differs from a second rate with which the processes send the information to the bulletin board. Optionally, the bulletin board may be accessed with guaranteed

20 access times, jitter, and bandwidth.

In addition, the bulletin board may be updated irregularly and triggered by internal or external objects including, but not limited to flags, events, signals, interrupts, etc. Event triggers may be provided independent of a link connection between nodes

25 where the processes are carried out. Moreover, failure redundancy may be provided through multiple independent links across diverse physical connections.

As yet another option, the information may have a user-configured constraint associated therewith. Such constraint may include a memory constraint, a real-time

30 constraint, etc. As a further option, the constraint may be configured utilizing a tool.

In one embodiment, a system is provided, comprising: an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for: receiving sensor
5 information associated with a message; in response to receiving the sensor information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information and, in response to issuing the storage resource request,
10 determining whether the storage resource is available to store the sensor information; determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request; when the storage resource included in the automotive electronic control unit
15 is determined, in response to issuing the storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource
20 included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information; when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to not be available and the threshold
25 tracked since the issuance of the storage resource request has been reached, sending an error notification; and when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to be available, storing the sensor information utilizing the storage resource; wherein the automotive electronic control
30 unit is operable such that the sensor information is capable of being shared in less than one second, and the automotive electronic control unit includes a plurality of

interfaces including: a first interface; and a second interface for interfacing with a network, where the network is at least one of a Controller Area Network, a Flexray network, or a Local Interconnect Network.

- 5 In one embodiment, an apparatus is provided, comprising: an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for: identifying sensor information associated with a message received utilizing a first network protocol
- 10 associated with a first network; in response to identifying the sensor information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information and, in response to issuing the storage resource request, determining
- 15 whether the storage resource is available to store the sensor information; determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request; in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not
- 20 be available and the threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information; in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the another storage resource request, to not be available and the threshold tracked since the
- 25 issuance of the storage resource request has been reached, sending an error notification; and in the event the storage resource included in the automotive
- 30

electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to be available, storing the sensor information utilizing the storage resource; wherein the apparatus is operable such that the sensor information is capable of being shared in less than one second

5 utilizing a second network protocol associated with a second network, and the automotive electronic control unit remains in hardwired communication with the first network and the second network and includes: a first interface for interfacing with the first network, the first interface including a first interface-related data link layer component for using first network-related data link layer header bits and a first

10 interface-related network layer component for using first network-related network layer header bits, where the first network is at least one of a Controller Area Network type, a Flexray network type, or a Local Interconnect Network type; and a second interface for interfacing with the second network, the second interface including a second interface-related data link layer component for using second

15 network-related data link layer header bits and a second interface-related network layer component for using second network-related network layer header bits, where the second network is at least one of the Controller Area Network type, the Flexray network type, or the Local Interconnect Network type.

20

BRIEF DESCRIPTION OF THE DRAWINGS

5 FIG. 1 is a block diagram of an embodiment of a system of one embodiment;

FIG. 2 is a block diagram generally depicting an embodiment of an ECU as part of the system illustrated in FIG. 1;

10 FIG. 3 is a block diagram generally depicting an embodiment of a Gateway device as part of the system illustrated in FIG. 1;

FIG. 4 is a block diagram of an embodiment of the software architecture assumed for one embodiment.

15

FIG. 5 is a block diagram of an embodiment of the middleware that contains the methods of one embodiment.

FIG. 6 is a block diagram of an embodiment of the bulletin board that describes the
20 process interaction of one embodiment.

FIG. 7 is a block diagram of an embodiment of the bulletin board that describes the process interaction with multiple external communication buses as part of one embodiment.

25

FIG. 8 is a flow chart diagram of an embodiment of the variable store from remote I/O method of one embodiment.

FIG. 9 is a flow chart diagram of an embodiment of the variable store from local I/O
30 method of one embodiment.

FIG. 10 is a flow chart diagram of an embodiment of the variable method of one embodiment.

5 FIG. 11 is a flow chart diagram of an embodiment of the variable retrieve method of one embodiment.

FIG. 12 is a flow chart diagram of an embodiment of the application process using the method of one embodiment

10 FIG. 13 is a flow chart diagram of an embodiment of the local I/O update from bulletin board method of one embodiment.

FIG. 14 is a flow chart diagram of an embodiment of the variable replication method of one embodiment.
15

FIG. 15 is a flow chart diagram of an embodiment of the message store from remote gateway method of one embodiment.

FIG. 16 is a flow chart diagram of an embodiment of the message forward to remote
20 ECU or Gateway method of one embodiment.

FIG. 17 is a state transition diagram of an embodiment of the mode switching method of one embodiment.
25

DETAILED DESCRIPTION

FIG. 1 is a block diagram generally depicting elements of an embodiment of the present distributed embedded communication and computing system. The system architecture may be situated in automotive electronics or industrial control and monitoring systems. In an automotive environment, the various Electronic Control Units (ECUs, **102**) control complex applications such as engine control, brake control, or diagnostics. They are either connected to sensors and actuators via discrete links or simple standard functions such as sensors and actuators are organized into separate sub networks.

These complex functions such as braking, engine-control, etc. are then grouped into the backbone system functions for the car, such as body control, power train and chassis. The backbone also includes the vehicle's high level functions such as diagnostics, telematics and entertainment systems.

Therefore the system is typically hierarchically organized and includes a variety of gateways (**101,104,105**), which relay messages up and down through the system layers. Each layer may contain multiple electronic control units (ECU, **102**) that are connected through wired serial multiplexing bus-systems such as Controller Area Network (CAN or ISO11898), Flexray, LIN, J1850, J1708, MOST, IEEE1394, and other similar serial multiplexing buses or through wireless multiplexing systems such as IEEE802.11, IEEE802.15, Bluetooth, Zigbee, or similar other wireless links.

Typically, functions provided by an ECU (**102**) are bound to hard real-time temporal behavior. In the context of the present description, real-time may include any response time that may be measured in milli- or microseconds, and/or is less than 1 second.

The ECU may receive a set of real-time input variables from local sensors (108), which are connected via discrete signal lines (113), or from networked sensors (106), which are connected through a multiplexing bus-system (112). The ECU may also share variables with other ECUs (102) that are either connected on the same physical multiplexing bus or that it can reach through a gateway (101,103,104).

Then the ECU (102) processes the input variables and generates a set of output variables that are either shared with other ECUs (102) as described above, or which are output to local actuators (109), which are connected via discrete signal lines (113), or to networked actuators, which are connected through a multiplexing bus (112). ECUs (102) typically share information with devices that are connected on the same physical multiplexing system. This method of information sharing is called horizontal information sharing in a hierarchical system. Gateways (101,103,104) link multiple physical multiplexing systems together. In the context of the present description, such information may include data, a signal, and/or anything else capable of being stored and shared.

The highest level in the hierarchical system is the system level. The system level gateway (101) may be connected to ECUs on the system level multiplexing bus (117), to subsequent gateways (103) that also link to subsequent communication buses (110), and to external components (120) that may contain diagnostics devices (121), development tools (122), other add-on devices (123) or other instances of distributed embedded communication and computing systems (100). In addition, the system gateway (101) may also be connected to an external gateway (131) that may link the system to a remote device (132) through wireless or wired wide-area-networks such as the Internet, using standard protocols such as UDP/IP, TCP/IP, RTP, HTTP, SOAP, JAVA, etc. or nonstandard proprietary protocols.

Subsequent to the system level may be several layers of groups and subgroups that are link to the higher levels via gateways (101,103,104,105).

During the design-time of the system, not all ECUs may exist. Therefore, the development tool (122) may provide a plug-in component or virtual ECU/GW (115) that directly links into the wired multiplexing bus or wireless network (110) and also
5 allows for separate control functions via a tool-link (116).

The block diagram in FIG. 2 depicts the detailed elements within a generic ECU (200) that is one embodiment of ECU (102). The ECU (200) typically contains a micro-processor (201), volatile memory (204) such as RAM, S-RAM or similar,
10 non-volatile memory (203) such as EEPROM, FLASH, etc., a real time clock for internal timing of processes (205), a watchdog (206) to maintain the health of the system, one or more communication bus controllers (207) with associated drivers (208), digital I/O (209) with line drivers (210), and analog I/O (211) with associated analog signal conditioning (212).

15 In an alternate embodiment, the ECU (200) may also contain a wireless communication controller (311) and a RF-Front-end (312) as outlined in FIG3. The software (202) can either be stored in local non-volatile memory (203) or partially downloaded via the communication link (207,208) and stored in the volatile
20 memory. The software is then executed in the microprocessor (201).

The block diagram FIG. 3 depicts the detailed elements within a generic gateway (300) that is one embodiment of Gateway (101,103,104,105) in FIG. 1.

25 FIG. 4 outlines one embodiment of the software architecture in an embedded system. The hardware abstraction layer (405) allows the system developer to adapt a standard operating system to a specific hardware as used in an ECU (200) or gateway (300). The hardware abstraction layer (405) adapts the real-time operating system (403) and the device drivers (404) to a specific hardware implementation.

30

One embodiment includes the middleware (402) that has direct access to the real-time operating system (403), the device drivers (404) and the hardware abstraction layer (405). The middleware isolates the application from input/output functions and allows multiple applications to share common variables locally. In addition, the
5 middleware lets applications share variables with remote applications/processes. In the context of the present description, a process may refer to any hardware and/or software operation, etc.

In one embodiment, the middleware can directly interface with the input/output
10 mechanisms of the hardware without utilizing an operating system (403) or hardware abstraction layer (405).

Another embodiment of the middleware utilizes a preemptive multitasking operating system with explicit control of resources. In an alternate embodiment, the
15 middleware can be built with a static multitasking scheme with implicit resource management or be part of a single task system.

Referring now to FIG. 5, the middleware (402) contains the bulletin board manager (501), a local signal communication interface (503), a remote message
20 communication interface (504), and an application programming interface (502). The application interface (502) provides methods and data interfaces to a plurality of applications. In one embodiment, the application interface is an object library that can be linked to an application at design time.

25 The bulletin board manager (501) contains an upgrade and configuration manager (507), an event manager (505), a data access manager (508), and a data integrity watchdog (506). The upgrade and configuration manager (507) is necessary to configure the data structure of the bulletin board and to make executable code available to individual processing nodes. In the context of the present description,
30 the bulletin board may refer to any database that enables users to send and/or read

electronic messages, files, and/or other data that are of general interest and/or addressed to no particular person/process.

5 The access manager provides access control mechanisms for the code update and configuration mode. It also may control access rights for individual applications at execution time in the run mode.

10 The event manager (**505**) captures input-output events as variables and generates new events, flags, or signals based on operations on state variables in the bulletin board. Such operations may include test of maximum values, the occurrence of logically combined events, the result of an integrity check, or events and signals that are created based on any other logical or arithmetic computation on the state variables that are stored in the bulletin board. The actual processing of data and manipulation of data may be done in the application that uses the middleware (**402**).
15 The data integrity watchdog analyses the stored state variables for its integrity and generates events or flags if any problem occurs.

20 The local signal communication interface (**503**) interfaces with the local discrete input/output hardware to update the bulletin board with new variables and to update the input/output interfaces with the state variables from the bulletin board. It also converts state variables to input/output signals and input/output signals to state variables that can be stored in the bulletin board. The conversion process may contain scaling of signals as well as offset compensation. Typically this processing helps to convert I/O signals that are measured in Volt to a physical entity and vice
25 versa. The communication with the local discrete input output system can be triggered by events or signals can be sampled time-triggered based on a cyclic global or local time base.

30 The remote message communication interface (**504**) interfaces to serial multiplexing interfaces (buses) that are connected to the specific processing node (ECU or Gateway). It extracts variables from a plurality of messaging protocols and stores

them in the database. It also replicates local bulletin-board state variables to the associated processing nodes by composing the appropriate messages for each communication link. The message transfer can be initiated triggered by a bus event, by a local event, or by a time-triggered mechanism that uses a cyclic local or global
5 time base.

FIG. 6 shows the concept of an extended bulletin board or an embedded real-time database (601). In this embodiment the ECU (102) or the Gateway (101) hosts one or multiple bulletin boards with relational links between the variables in the bulletin
10 boards. The relations are defined by data processing functions that the gateway can operate on bulletin boards to obtain new information that can be stored in yet another bulletin board.

The bulletin board (601) may contain but is not limited to events (607), real-time
15 variables (608), diagnostics data (609), configuration parameters (610), and firmware (611) to upgrade individual components of the executable code or the entire software of a processing node. Each type of information may include one or more sections so that individual processes are not blocked if they access separate sections of data.

20 The memory of the bulletin board is subdivided into areas that nodes on each external network can read from and write into and other areas that an external network may only read from. The data contained in the bulletin board may be stored in volatile or non-volatile memory. Each data entry may consist of one value or an
25 array of values that also may represent a time series.

In one embodiment, each application process (603), local signal communication process (605), remote message communication process, and the bulletin manager (602) can individually access the bulletin board using operating system functions for
30 resource management that may include semaphores, events, signals, call-back routines, flags, etc. in an alternate embodiment of the system the bulletin-board

manager controls all interaction with the bulletin-board and all applications have to pass data to the bulletin-board manager. This approach simplifies the interaction with the bulletin board, but adds delay time and jitter to the state variables.

- 5 At design time, various hierarchies of memory management can be applied. In practice it is more efficient to allow each sub network and subsystem to place system variable data into local bulletin boards. This is because many system variables are primarily used only within their subsystem or sub network. By placing local information in a shared memory (local bulletin board), it can be used by multiple
10 processes on this processor node. A group bulletin board allows devices on a sub-network to share information with a minimum of network traffic. A system bulletin board allows access to system-wide variables and information.

- FIG. 7 illustrates the logical architecture of the interconnection between three
15 heterogeneous network controllers (**702, 703, 704**), the associate Operating System interfaces (**705**), the remote message communication process (**706**), the bulletin board (**608**), and the application process (**606**). The connection to each communication controller is fundamentally implemented at the physical interface (the wire, fiber or electromagnetic wireless interface). Each of the higher level layers
20 (data link, network, etc) in the communication interface (**705**) deals with specific features of the individual communication process. In practice these layers are typically represented in a message by "header" bits that contain information about that layer of the network being used to send the message.

- 25 Using this model, each communicated message may be processed at each layer to remove (and use) the associated header information for that level. Once all layers are processed the remaining packet data unit (PDU) represents the datum or core information carried by the overall message. In one embodiment, each communication controller has an associated communication interface and an
30 associated remote message conversion mechanism. For instance communication bus

controller **2 (703)** has an associated communication interface **2 (709)**, and an associated remote message conversion **2 (710)**.

5 This arrangement allows the remote message process (**706**) to directly access information at the data link layer and interface it with the bulletin board. A network layer is not necessary. The remote message communication process (**706**) has a multi-network access interface (essentially a processing capability that can interpret and apply the header information for a variety of networks) and the bulletin board read/write memory access. Now, the individual processing nodes do not need to
10 know about the existence of multiple networks. Each variable can be accessed from all connected physical networks in their proprietary format. Thus the normalization of the information has only to be handled at the gateway through replication of stored data to multiple attached networks.

15 Continuing with FIG. 7, the communication procedure is described. In the given example, an external event (**701**) on communication controller **2 (703)** triggers the operating system to notify the remote message communication process (**706**) that data is available. The notification may be a flag, a call-back routine, an event, or any other operating signal. The associated remote message conversion method **2 (710)**
20 extracts the data (e.g. real time variables) from the message PDU and stores the data in the bulletin board (**608**). It may also store the associated event as variable in the bulletin board and signal the bulletin-board event manager that new data is available.

The bulletin event manager then notifies the application process (**606**) with the
25 appropriate mechanism. In addition, the event manager may trigger the sampling of local signals using the local signal communication process (**605**) described in FIG. 6. Finally the bulletin event manager may trigger the bulletin board manager (**707**) to perform integrity checks or generate additional events based on the change of the state variables.

30

One embodiment provides a new mechanism for creating an information interconnection between two or more heterogeneous communication networks. In the context of the present description, heterogeneous networks may refer to any different communication networks with at least one aspect that is different.

5

The approach uses a common, or shared storage system that is connected to all of the system networks through network interfaces. A critically important feature of the bulletin board approach is that the complexity of the bulletin board grows linearly with the number of networks (as opposed to as $N(N-1)$ for the gateway approach), and in one-to-many situations the number of message transformations is half that of the standard networking approach.

10

In an alternate embodiment of the remote message communication process (706) any remote process can access data via a single network interface. This approach requires a network layer in each processing node and therefore adds overhead to communications. To communicate between two heterogeneous networks, this process may then be repeated in reverse by adding back the header information for the various layers of the second network, and eventually putting the message onto the second network's physical link. The remote message communication manager (706) then can be simplified to only one message assembly and disassembly mechanism.

15

20

FIGS. 8-17 illustrate the method of operation of one embodiment of the present system, and also refer to aspects and elements one embodiment shown in FIGS. 1 through 7.

25

FIG. 8 details the remote messaging process (706) described in FIG. 7. Referring now to FIG. 8, the core process of storing data from remote processes that are communicated through multiplexed communication links, into the bulletin board is described. An external notification or task activation starts the process. Then a message (802) is received from the operating system layer.

30

In an alternate embodiment, the message is directly copied from the input register of the communication controller. Then the process extracts variables from the message. Additional signal adaptation may be necessary. The sub-process **804** stores the
5 variables in the bulletin board. If the process only updates one section of the bulletin board it waits for the next message notification (**806**). If variables in multiple sections need to be updated, the process repeats (**804**).

FIG. **9** shows the data update from local input/output peripherals. The process starts
10 with an internal or external notification or task activation. Typically this process is repeated cyclic triggered by an internal or external real-time clock. When the process is activated, it samples or polls the local input ports that may include analog and digital signals (**902**). Then it converts these signals to real-time variables by using the conversion parameters stored in the bulletin board. The signal conditioning
15 parameters can either be defined at design time or adaptively updated by the application process. Then the process stores the new state variables in the bulletin board using the sub-process (**804**) described above.

FIG. **10** describes the bulletin board store procedure (**804**) in more detail. Before
20 new data can be stored in the bulletin board, the procedure has to request the access right to the common resource, a section of the non-volatile or volatile memory, from the operating system (**1001**). This is called explicit resource management.

If the resource is available, the process gets the resource. If the resource is not
25 available, it may try it again after a waiting period (**1011**) until the resource is available. After a certain time has elapsed (**1009**) beyond a configurable threshold, the temporal behavior of the state variable can't be captured any longer and the middle-ware may send an error notification to the associated process.

30 After reserving the resource (**1003**), the bulletin board store mechanism (**804**) timestamps the state variable for future temporal reference (**1004**). Then, the bulletin

board store procedure (**804**) copies the variables or parameters from its private memory (**1006**) to the shared bulletin-board memory (**601**). Then it releases the bulletin board resource.

5 In an alternate embodiment, the bulletin board store procedure (**804**) has exclusive access to the bulletin board (**601**) and does not need operations **1002**, **1003**, **1007**, **1009**, **1010**, and **1011** because the resource access is realized through implicit resource management. This can be achieved with either static task scheduling or by allowing only the bulletin board store procedure (**804**) to access the bulletin board
10 (**601**).

FIG. **11** describes the bulletin board retrieve procedure (**1101**) in more detail. Before data can be retrieved from the bulletin board, the procedure has to request the access right to the common resource, a section of the non-volatile or volatile memory, from
15 the operating system (**1102**).

If the resource is available, the process gets the resource. If the resource is not available, it may try it again after a waiting period (**1108**) until the resource is available. After a certain time has elapsed (**1109**) beyond a configurable threshold,
20 the temporal behavior of the state variable can't be captured any longer and the middle-ware may send an error notification to the associated process (**1110**).

After reserving the resource (**1104**), the bulletin board retrieve mechanism (**1101**) copies the variables or parameters from the shared bulletin-board memory (**601**) to
25 its private memory (**1006**). Then, it releases the bulletin board resource.

In an alternate embodiment the bulletin board retrieve procedure (**1101**) has exclusive access to the bulletin board (**601**) and does not need operations **1103**, **1104**, **1106**, **1108**, **1109**, and **1110**. Because the resource access is realized through implicit resource management, this can be achieved with either static task scheduling

or by allowing only the bulletin board retrieve procedure (**1101**) to access the bulletin board (**601**).

Referring to FIG. **12**, the application process (**1200**) utilizes the bulletin board
5 retrieve mechanism (**1101**) to access all parameters, events, and real-time variables from the bulletin board. Thus the application process is decoupled from the temporal behavior of the input/output variables and can be triggered by a plurality of events (**1201**).

10 The application process may retrieve one or multiple sets of variables stored in a plurality of memory sections. Then the application process processes the variables (**1203**) with its method. Because the method is not tied to the location of the input/output variables, the application process can be moved or replicated to a plurality of processing nodes (ECUs or Gateways). After processing the input
15 variables and generating a set of output variables, the application process uses the bulletin board store method (**801**) to update one or a plurality of memory sections in the bulletin board. If the application process is a cyclic procedure, it waits until the next activation occurs (**1205**).

20 Continuing with FIG. **13**, the update local I/O from bulletin board process (**1300**) utilizes the bulletin board retrieve mechanism (**1101**) to access real-time variables from the bulletin board and convert them to output signals (**1302**) that can be written to the output port (**1303**). The I/O update process may retrieve one or multiple sets of variables stored in a plurality of memory sections. If the I/O update process is a
25 cyclic procedure, it waits until the next activation occurs (**1305**).

FIG. **14** describes the data replication process (**1400**). This process can be triggered by a plurality of notification mechanisms, such as events, alarm signals, internal and external timers, and flags set in the bulletin board. It then selects a subset of
30 variables to be replicated and a communication port (**1402**). Next it retrieves the

variables from the bulletin board with mechanism (1401) and assembles the messages for the specific communication link (1403). The message may include an address or identification number for all bulletin boards and associated processing nodes (ECUs and Gateways).

5

Finally, it writes the messages to the communication port (1404). In an alternate embodiment, it handles the messages to the associated interface procedure of the operating system. Then it repeats the procedure, until all variables are updated on all communication ports. If the data replication process is a cyclic procedure, it waits
10 until the next activation occurs (1405).

Referring now to FIG. 15, the store message from remote processing node (gateway or ECU) process (1500) describes how replicated data is stored in the bulletin board. This process can be triggered by a plurality of notification mechanisms, such as
15 internal or remote events, alarm signals, internal and external timers, and flags set in the bulletin board. The communication bus may also issue these notifications. The process (1500) then reads a message from the communication port (1502), selects a subset of variables to be replicated (1503), and stores the variables in the bulletin board with procedure (801). In an alternate embodiment, this procedure may also be
20 used to store a packet data unit (PDU) in the bulletin board for later replication on the same or a different communication link.

This store and forward networking mechanism can be implemented without the need for complex networking protocols and is therefore well suited for limited processing
25 power and memory environments. It also works in soft-real time environments when no strict temporal behavior is required. The data store operation (801) may be repeated for a plurality of bulletin board sections. If the data replication process is a cyclic procedure, it waits until the next activation occurs (1505).

30 Continuing now with FIG. 16, the store and forward updating mechanism (1600) replicates messages from remote processing nodes to other processing nodes from

stored packet data units in the bulletin board. This process can be triggered by a plurality of notification mechanisms (1601), such as internal or remote events, alarm signals, internal and external timers, and flags set in the bulletin board. The communication bus may also issue these notifications.

5

The process (1600) then selects a message to be forwarded (1602) and the appropriate communication link and retrieves the PDU with the bulletin board retrieve mechanism (1101). It then adds the appropriate messages header for the communication link (1603) and may add routing information (1604). Finally the
10 update process (1600) writes the messages to the communication port (1605). If the updating process is a cyclic procedure, it waits until the next activation occurs (1607).

FIG. 17 describes the various modes that the distributed communications and
15 computing system (100) can be operated in. In one embodiment, the system operates in various distinct modes in order to preserve the integrity of the system and still allow for changing the architecture and behavior of the network or the roles of the individual nodes. When the distributed computing and communication system wakes up from the sleep mode (1701), it can enter a configuration and upgrade mode
20 (1702), an emergency or debug mode (1704), or the normal real-time run mode (1703). The root node or system gateway in a distributed communication and computing system defines the mode based on the existence of external events, such as an external control command, internal events, a system failure, or failed integrity check.

25

Referring now to FIG. 1, the external commands may be generated from a development tool (122) or a remote device (132) that is connected via a remote gateway (131). In an alternate embodiment, each ECU (102) or virtual ECU (115)
30 can trigger the system to enter a different operating mode.

Continuing with FIG. 17, in the configuration mode (**1702**), the system software and the information-sharing configuration can be updated via a secure communication link with encrypted commands. Each processing node (ECU or gateway) may have security mechanisms such as a certificate that allows it to identify and authorize
5 another entity (remote gateway, remote ECU, or development tool) to make changes to its bulletin board parameters.

The remote entity may also download a new firmware to the bulletin board. The ECU or gateway can store this new firmware in its non-volatile memory while it
10 backs up the original image on the bulletin board for the case that the new software is not functional. In the update mode, the distributed system can also reconfigure the communication and computing infrastructure based on a new set of parameters that need to be stored in the individual bulletin boards.

15 In the normal run mode (**1703**), the system operates in the real-time information sharing mode and network configuration and certain parameters can't be changed. That protection allows defining deterministic temporal behavior on all communication links. But any processing node may enter a debug/emergency mode (**1704**) if a failure or other qualifying event occurs.

20 In the emergency mode, a processor executes an alternate procedure that maintains the temporal behavior on the communication links but may reduce or increase the amount of information shared with other processors. It also lets other processing nodes check on the integrity of sensors and actuators. In the maintenance and
25 upgrade mode, an external system can upgrade executable code images and the bulletin-board configuration via secure communication links.

A system and method are thus provided for sharing information within a distributed embedded communications and computing system and with components outside the
30 embedded system. The information sharing mechanism relies on a bulletin board that may include a small database operating under hard real-time conditions with

minimal delays, communication latency, and jitter. The embedded database or bulletin board isolates a real-time application in a Electronic Control Unit (ECU) from various other real time applications and from input output signals in the same module (local information sharing), from event-triggered communications with applications in other modules, and from time-triggered communications with applications in other modules.

One design criteria of the database is that the temporal behavior of communications does not impact the real-time computing task and provides enough information access performance at peak time demand. Typically, distributed embedded systems consist of a static structure that can be analyzed at design time. In addition to the real-time operation, the proposed method for information sharing also provides access to the parameters of the embedded system and allows for software upgrades of certain modules.

15

The present embodiment addresses the shortcomings of traditional computer networks with following enhancements:

1) The concept of multi-mode storage that links two or more communication networks via a bulletin board. The bulletin board is a multi-mode storage that can be thought of an extension to shared memory that can be accessed by local and remote processes at attached networks. There may be multiple hierarchical layers of bulletin boards depending on the topology of the communication system. The bulletin board increases the network efficiency by reducing the number of transactions needed to access remote variables.

2) The concept of a direct-access bulletin board that does not require a network layer translation of messages on each node of the network. Even though this approach restricts the reach of each node to only adjacent nodes and the next gateway, this still allows cross-network variable sharing though vertical real-time replication of data.

3) The concept of hierarchical bulletin board management that allows restriction of information access to certain levels in a network, but still allows the replication of information to other nodes in the network. This paradigm follows the path of
5 reducing the information amount from the leaves of the network to central control and diagnosis hubs.

4) The concept that a gateway can host an assembly of bulletin boards or embedded database that allows operations on bulletin boards to generate events for
10 associated processes. This extension allows definition of a set of data processing operations that would be done once in a network and would be instantly available for connected nodes. Examples for operations are sensor data state observers, diagnostics, integrity checks, fail-safe mechanisms, etc.

15 5) The concept that an embedded communication and computing network can run in multiple modes in order to provide for a guaranteed deterministic behavior of the system. This property can be achieved by only allowing change to the configuration and/or the functions (SW code) in a secured configuration and upgrade mode. If the network is booted in the normal operating mode, all processors execute
20 the existing code and only allow data sharing through the bulletin boards. The emergency or debug mode lets the network run in a fail-safe reduced operation mode or in a diagnostic mode that allows inspection of the system, while it is running. For each operating mode, the gateway can store a processing image on the bulletin board. The advantage of this procedure is that only the communication hubs need to
25 deal with secure data transfer and encryption while the peripheral nodes in the network can be relative simple in design.

6) The concept of designing the topology of a distributed computing and communication system independent of the definition of the individual functions that
30 the network performs. Each processing task is only associated with a bulletin board, but isolated from I/O processing.

Of course, these are all optional embodiments/enhancements.

While various embodiments have been described above, it should be understood that
5 they have been presented by the way of example only, and not limitation. Thus, the
breadth and scope of a preferred embodiment should be not limited by any of the
above described exemplary embodiments, but should be defined only in accordance
with the following claims and their equivalents.

CLAIMS

What is claimed is:

1. A system, comprising:

an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for:

receiving sensor information associated with a message;

in response to receiving the sensor information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information and, in response to issuing the storage resource request, determining whether the storage resource is available to store the sensor information;

determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request;

when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource

included in the automotive electronic control unit to store the sensor information;

when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached, sending an error notification; and

when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to be available, storing the sensor information utilizing the storage resource;

wherein the automotive electronic control unit is operable such that the sensor information is capable of being shared in less than one second, and the automotive electronic control unit includes a plurality of interfaces including:

a first interface; and

a second interface for interfacing with a network, where the network is at least one of a Controller Area Network, a Flexray network, or a Local Interconnect Network.

2. The system as recited in claim 1, wherein the system is operable such that the sensor information reaches a destination on the network in less than one second.
3. The system as recited in claim 1, wherein the system is operable such that the sensor information reaches a destination on the network in less than a millisecond.
4. The system as recited in claim 1, wherein the system is operable such that a duration between the sensor information being received and being shared is less than one second.

5. The system as recited in claim 1, wherein the system is operable such that a duration between the sensor information being received and the sharing being completed is less than a millisecond.
6. The system as recited in claim 1, wherein the system is operable such that the sensor information is shared in less than a millisecond.
7. The system as recited in claim 6, wherein the system is configured for sharing automotive sensor data between heterogeneous networks with sufficient speed for use in connection with an automotive device.
8. An apparatus, comprising:
 - an automotive electronic control unit including a memory storage comprising instructions, and at least one hardware processor in hardwired communication with the memory storage, wherein the at least one hardware processor executes the instructions for:
 - identifying sensor information associated with a message received utilizing a first network protocol associated with a first network;
 - in response to identifying the sensor information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information and, in response to issuing the storage resource request, determining whether the storage resource is available to store the sensor information;
 - determining whether a threshold tracked since the issuance of the storage resource request has been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request;
 - in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request,

to not be available and the threshold tracked since the issuance of the storage resource request has not been reached indicating that the storage resource has not been available in association with the threshold tracked since the issuance of the storage resource request, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information;

in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached, sending an error notification; and

in the event the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request or the another storage resource request, to be available, storing the sensor information utilizing the storage resource;

wherein the apparatus is operable such that the sensor information is capable of being shared in less than one second utilizing a second network protocol associated with a second network, and the automotive electronic control unit remains in hardwired communication with the first network and the second network and includes:

a first interface for interfacing with the first network, the first interface including a first interface-related data link layer component for using first network-related data link layer header bits and a first interface-related network layer component for using first network-related network layer header bits, where the first network is at least one of a Controller Area Network type, a Flexray network type, or a Local Interconnect Network type; and

a second interface for interfacing with the second network, the second interface including a second interface-related data link layer component for using second network-related data link layer header

bits and a second interface-related network layer component for using second network-related network layer header bits, where the second network is at least one of the Controller Area Network type, the Flexray network type, or the Local Interconnect Network type.

9. The apparatus as recited in claim 8, wherein the apparatus is operable such that network layer translation is capable of being avoided.
10. The apparatus as recited in claim 8, wherein the apparatus is configured for sharing automotive sensor data received via the first network for use in connection with an automotive device on the second network, in less than the one second.
11. The apparatus as recited in claim 8, wherein the apparatus is configured for sharing automotive sensor data received via the first network for use in connection with an automotive actuator on the second network, in less than a millisecond.
12. The apparatus as recited in claim 11, wherein the apparatus is operable such that the sensor information is shared by the second interface-related network layer component using the second network-related network layer header bits by adding the second network-related network layer header bits to a data unit including the sensor information, and then the second interface-related data link layer component using the second network-related data link layer header bits by adding the second network-related data link layer header bits to the data unit, before communicating the data unit on a physical link of the second network.
13. The apparatus as recited in claim 12, wherein the apparatus is operable such that the first interface-related data link layer component uses the first network-related data link layer header bits by removing the first network-related data link layer header bits from another data unit, and the first interface-related network layer component uses the first network-related network layer header bits by removing the

first network-related network layer header bits from the another data unit so that the sensor information is removed from the another data unit, before the sharing.

14. A non-transitory computer-readable medium of an automotive electronic control unit for storing a computer program product including code that, when executed by at least one hardware processor included in the automotive electronic control unit in communication with the non-transitory computer-readable medium, is for:

- receiving sensor information associated with a message received utilizing a first network protocol associated with a first network;

- in response to receiving the sensor information, issuing, by the at least one hardware processor and to a storage resource included in the automotive electronic control unit, a storage resource request to access the storage resource included in the automotive electronic control unit, for determining whether the storage resource included in the automotive electronic control unit is available to store the sensor information;

- determining whether a time-related threshold tracked after the issuance of the storage resource request has been reached in association with the determination whether the storage resource is available;

- when the storage resource included in the automotive electronic control unit is determined to not be available and the threshold associated with the determination whether the storage resource is available has not been reached, issuing, by the at least one hardware processor to the storage resource included in the automotive electronic control unit, another storage resource request to access the storage resource included in the automotive electronic control unit to store the sensor information;

- when the storage resource included in the automotive electronic control unit is determined to not be available and the threshold associated with determination whether the storage resource is available has been reached, ceasing repeating issuance of another storage resource request; and

when the storage resource included in the automotive electronic control unit is determined to be available, storing the sensor information utilizing the storage resource;

wherein the computer program product is operable such that the sensor information is capable of being shared in less than one second utilizing the automotive electronic control unit that remains in hardwired communication with the first network and a second network, and that includes a plurality of interfaces including:

a first interface for interfacing with the first network, where the first network is one of a Controller Area Network, a Flexray network, or a Local Interconnect Network; and

a second interface for interfacing with the second network, where the second network is another one of the Controller Area Network, the Flexray network, or the Local Interconnect Network.

15. The non-transitory computer-readable medium as recited in claim 14, wherein the computer program product is operable such that the sensor information reaches a destination on the second network in less than one second.

16. The non-transitory computer-readable medium as recited in claim 14, wherein the computer program product is operable such that the sensor information reaches a destination on the second network in less than a millisecond.

17. The non-transitory computer-readable medium as recited in claim 14, wherein the computer program product is operable such that a duration between the sensor information being received and the sharing being completed is less than one second.

18. The non-transitory computer-readable medium as recited in claim 14, wherein the computer program product is operable such that a duration between the

sensor information being received and the sharing being completed is less than a millisecond.

19. The non-transitory computer-readable medium as recited in claim 14, wherein the computer program product is operable such that the sharing of the sensor information is completed in less than a millisecond.

20. The non-transitory computer-readable medium as recited in claim 14, wherein the computer program product is configured for sharing the sensor information in the form of automotive sensor data received via the first network for use in connection with an automotive device on the second network, in less than the one millisecond second.

21. The apparatus as recited in claim 8, wherein the apparatus is operable such that the storage resource request and the another storage resource request are identical.

22. The apparatus as recited in claim 8, wherein the apparatus is operable such that the storage resource request and the another storage resource request are the same.

23. The apparatus as recited in claim 1, wherein the apparatus is operable such that the sensor information excludes all header bits of the message.

24. The apparatus as recited in claim 1, wherein the apparatus is operable such that the sensor information excludes at least a portion of any header bits of the message.

25. The apparatus as recited in claim 1, wherein the apparatus is operable such that the storage resource includes a bulletin board.

26. The apparatus as recited in claim 1, wherein the apparatus is operable such that the error notification is sent, when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached.

27. The apparatus as recited in claim 1, wherein the apparatus is operable such that the error notification is sent, when the storage resource included in the automotive electronic control unit is determined, in response to issuing the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached.

28. The apparatus as recited in claim 1, wherein the apparatus is operable such that the error notification is sent, when the storage resource included in the automotive electronic control unit is determined, in response to issuing the storage resource request and the another storage resource request, to not be available and the threshold tracked since the issuance of the storage resource request has been reached.

29. The apparatus as recited in claim 8, wherein at least one of:

- the memory storage includes the storage resource;
- the memory storage does not include the storage resource;
- the storage resource is part of the memory storage;
- the storage resource is not part of the memory storage;

the sensor information includes original data received from a sensor or derived data derived from original data received from the sensor;

- the threshold is time-related;
- the threshold is a timeout;
- the threshold includes a duration threshold;
- the threshold does not include a duration threshold;
- the threshold is configurable;

the storage resource included in the automotive electronic control unit is determined to be available, when automotive electronic control unit gets the storage resource;

the storage resource included in the automotive electronic control unit is determined to be available, when automotive electronic control unit gets access to the storage resource;

the storage resource included in the automotive electronic control unit is determined to be not available, when automotive electronic control unit does not get the storage resource;

the storage resource included in the automotive electronic control unit is determined to be not available, when automotive electronic control unit does not get access to the storage resource;

the second interface-related data link layer component includes a data link layer component related to the second interface;

the data link layer component is a component that operates in a data link layer;

the data link layer component is a component that operates using the data link layer header bits;

the second interface-related network layer component includes a network layer component related to the second interface;

the network layer component is a component that operates in a network layer;

the network layer component is a component that operates using network layer header bits;

the data link layer component is a component that operates in a data link layer, and the network layer component is a components that operates in a network layer, where the data link layer resides directly below the network layer;

the data link layer component is a component that operates in a data link layer, and the network layer component is a components that operates in a network layer, where the data link layer resides below the network layer;

the data link layer component is a component that operates in a data link layer, and the network layer component is a components that operates in a network layer, where the data link layer resides directly adjacent the network layer;

the data link layer component is a component that operates in a data link layer, and the network layer component is a components that operates in a network layer, where the data link layer resides adjacent the network layer;

the network-related data link layer header bits are relate to a particular network; or

the network-related network layer header bits are relate to a particular network.

30. A method for sharing information, the method comprising:

at an electronic control unit:

allowing receipt of information associated with a message, utilizing a first network protocol associated with a first network;

causing a determination as to whether a storage resource of the electronic control unit is available;

in the event the storage resource is not available, determining whether a timeout has been reached and causing a re-request in connection with the storage resource if the timeout has not been reached;

in the event the timeout has been reached, causing an error notification to be sent;

in the event the storage resource is available, causing storage of the information utilizing the storage resource; and

causing the information to be shared by:

in real-time, sharing the information utilizing at least one message format corresponding to a second network protocol associated with a second network which is different from the first network protocol;

wherein the plurality of interface portions include:

a first interface portion for interfacing with the first network, the first interface portion including a first interface-related first layer part for receiving first interface-related first layer messages and a first interface-related second layer part, the first interface-related first layer messages being processed after which first interface-related second layer messages are provided, where the first network is at least one of a Controller Area Network, a Flexray network, or a Local Interconnect Network; and

a second interface portion for interfacing with the second network, the second interface portion including a second interface-related first layer part for receiving second interface-related first layer messages and a second interface-related second layer part, the second interface-related first layer messages being processed after which second interface-related second layer messages are provided.

ABSTRACT

A system, method and computer program product are provided for receiving information associated with a message, issuing a storage resource request in connection with a storage resource and determining whether the storage resource is available. In use, the information is capable of being shared in less than one second, utilizing an automotive electronic control unit which includes a plurality of interfaces.

FIGURE 1 100 Distributed Embedded Communication and Computing System

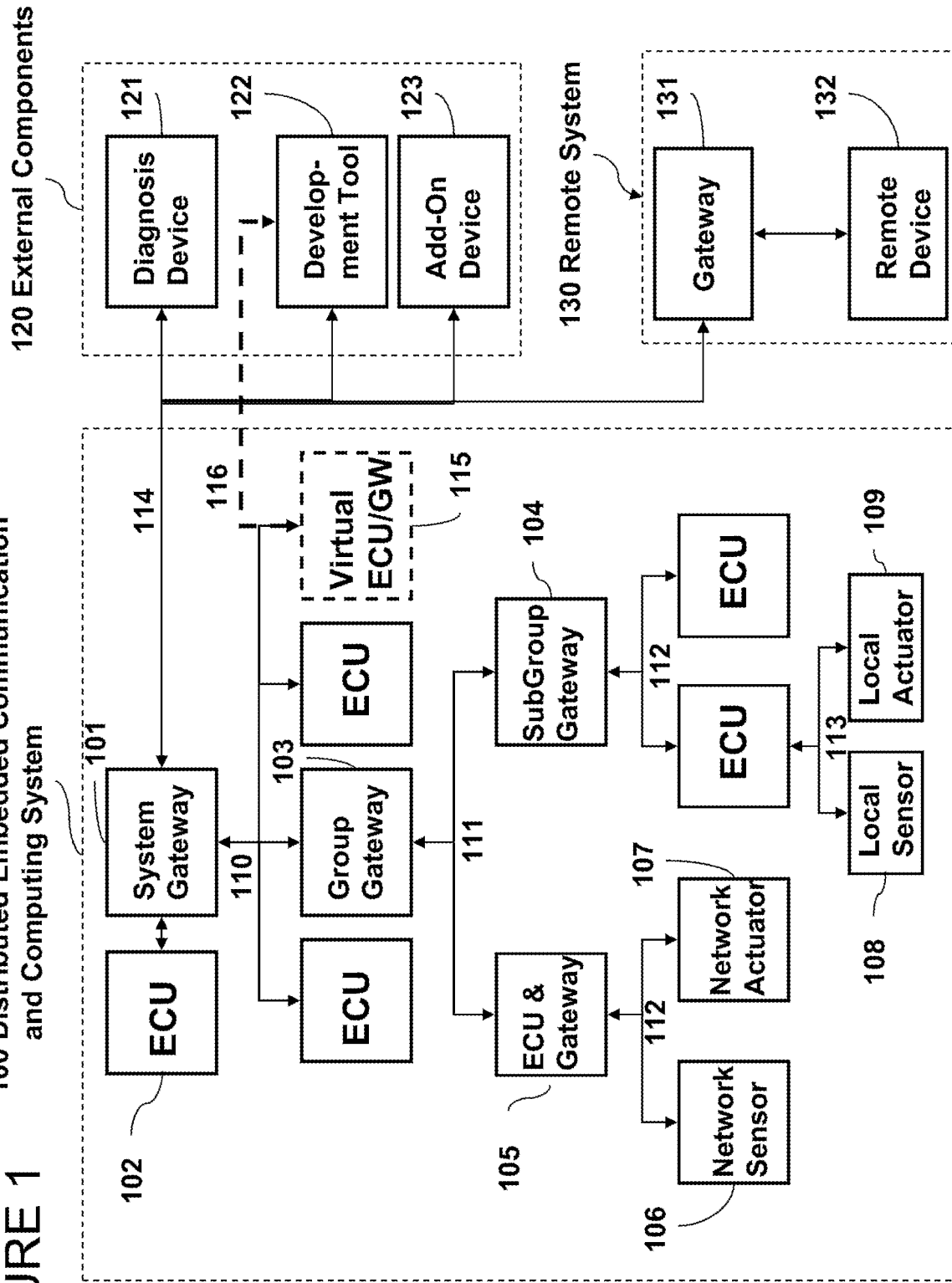
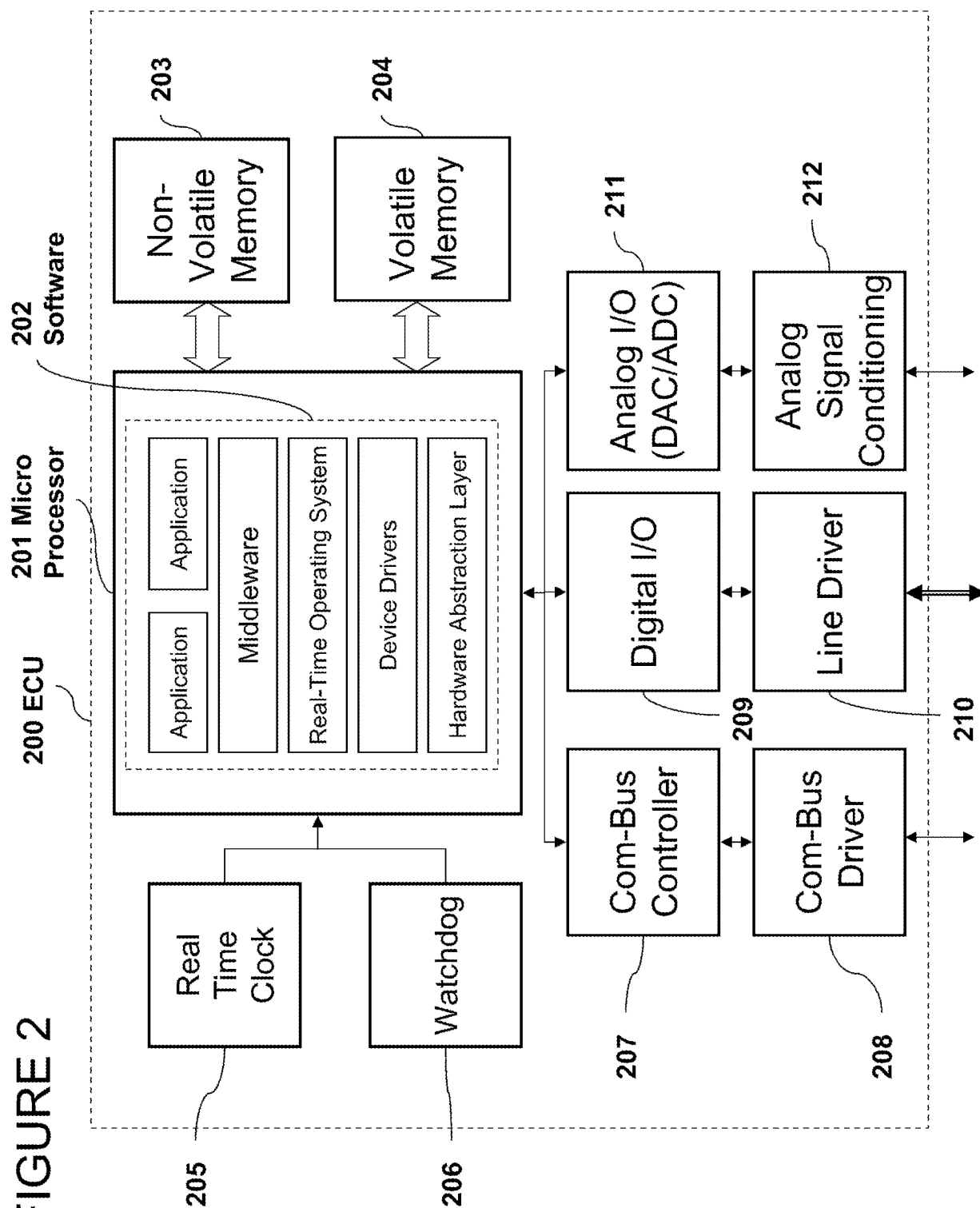


FIGURE 2



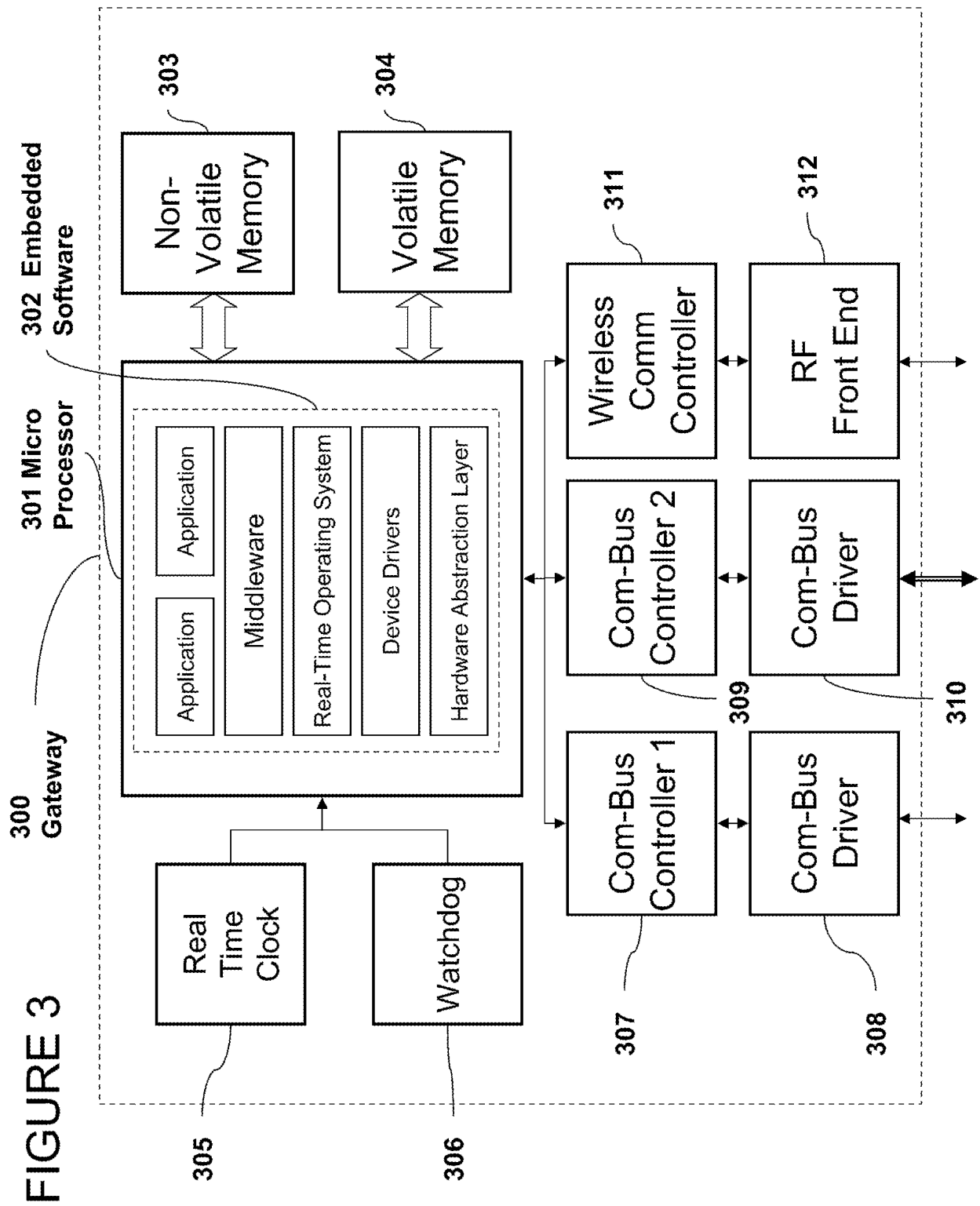


FIGURE 4 **302 Embedded Software**

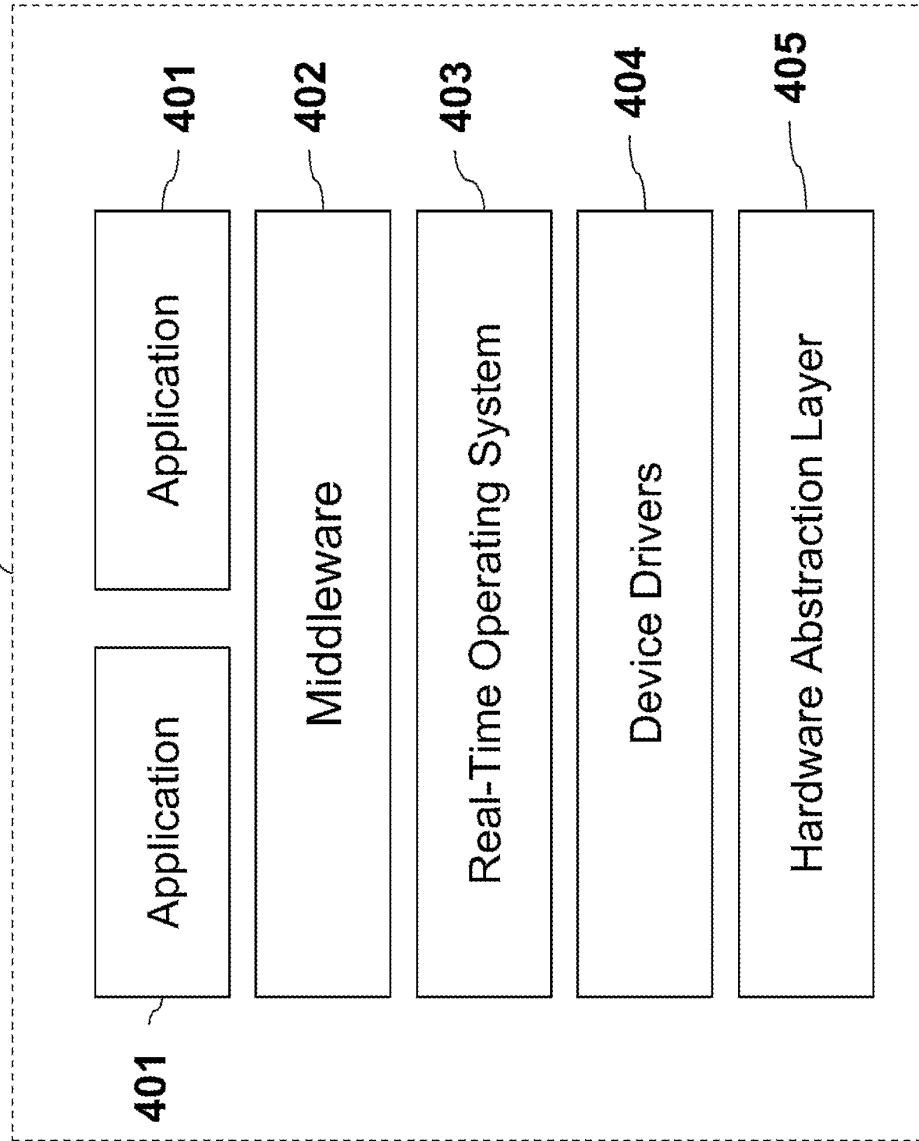
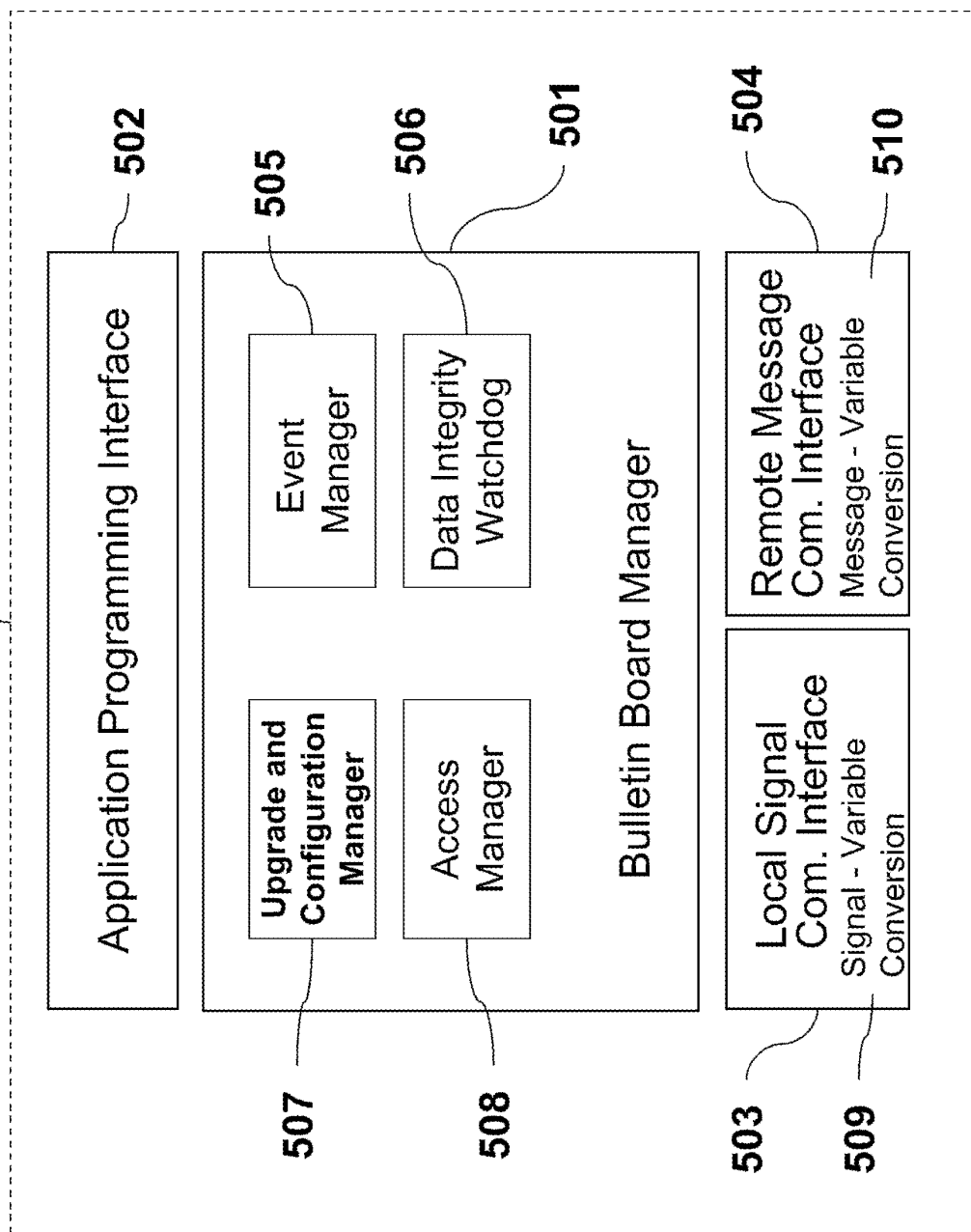


FIGURE 5

402 Middleware



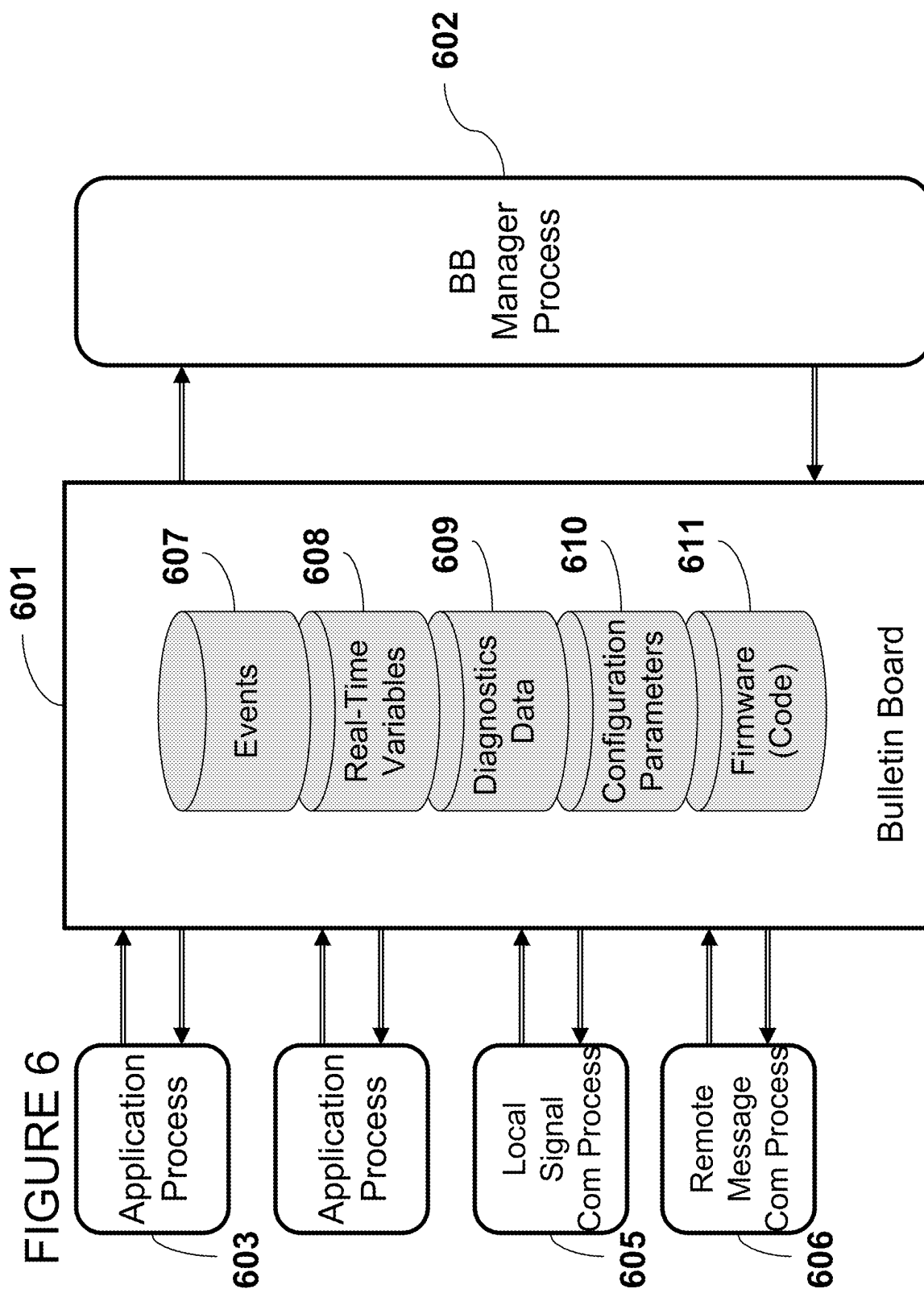
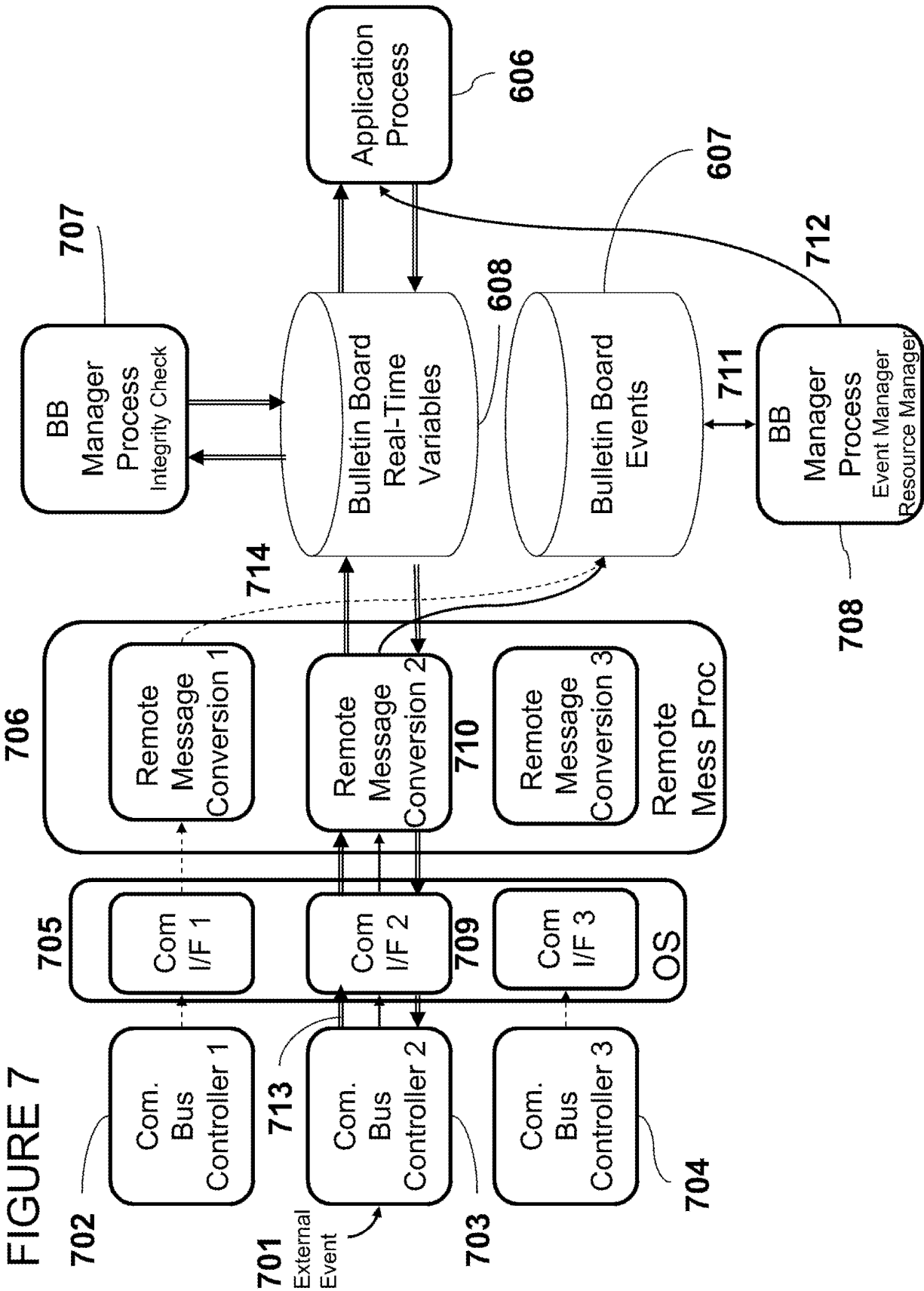
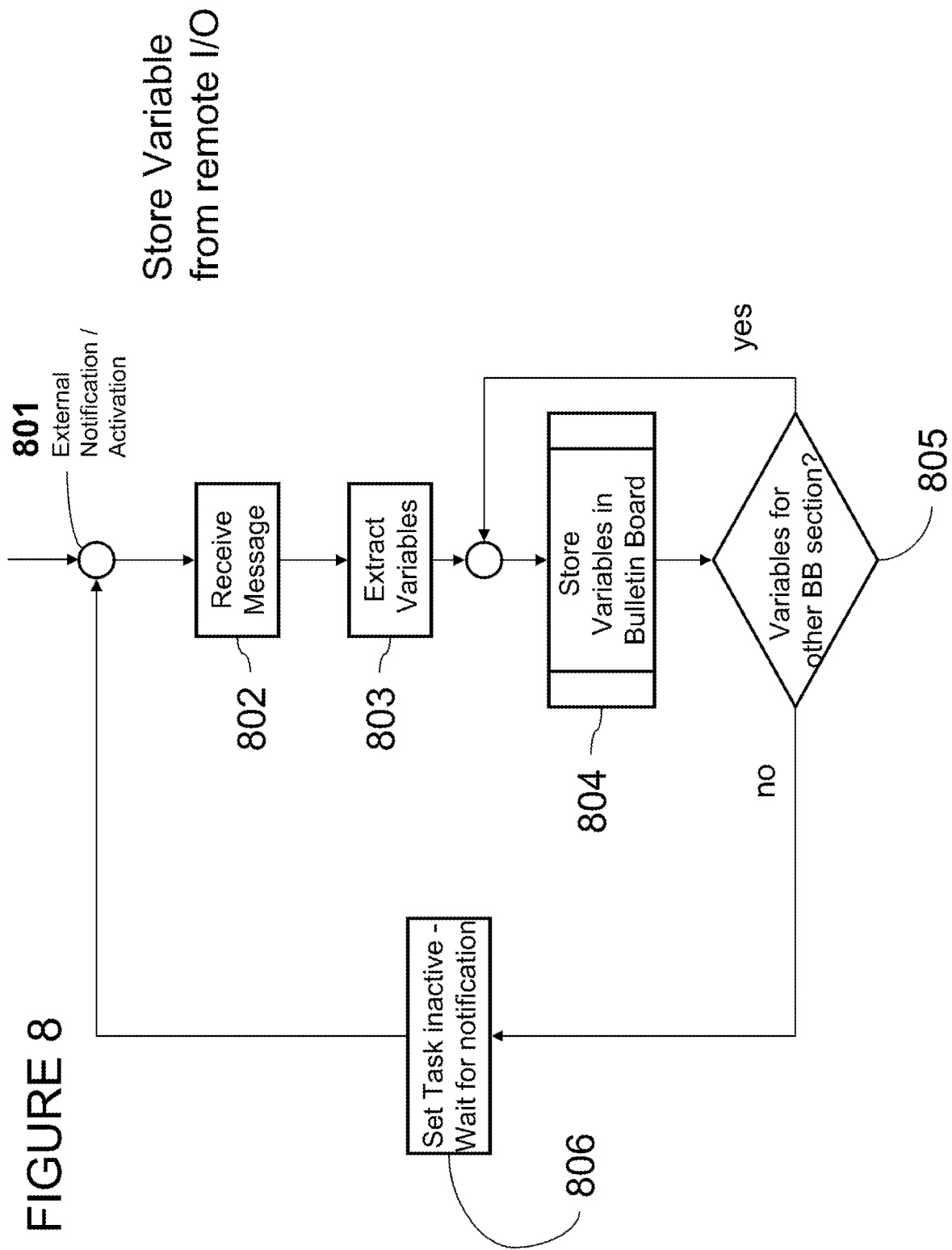


FIGURE 7





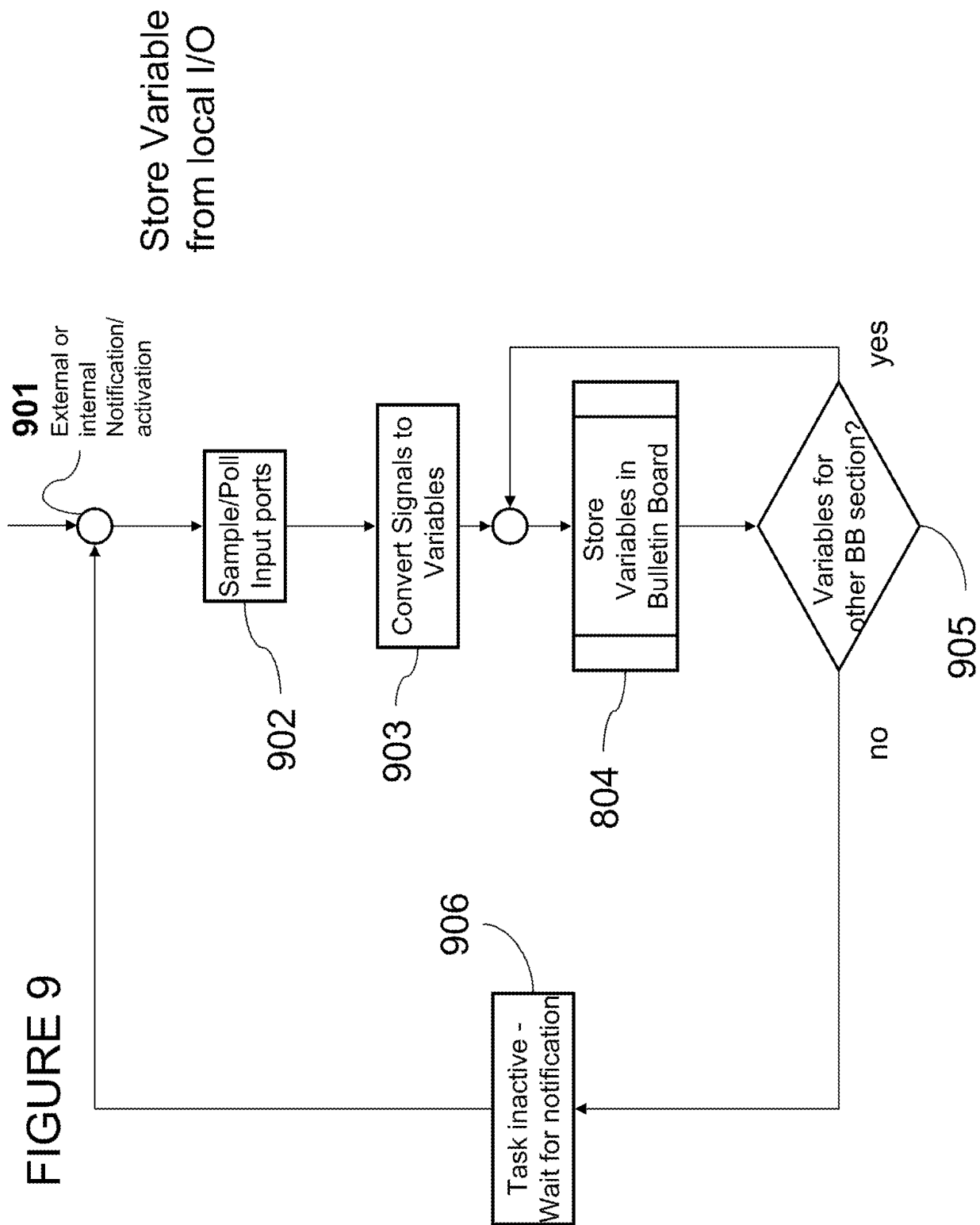


FIGURE 10

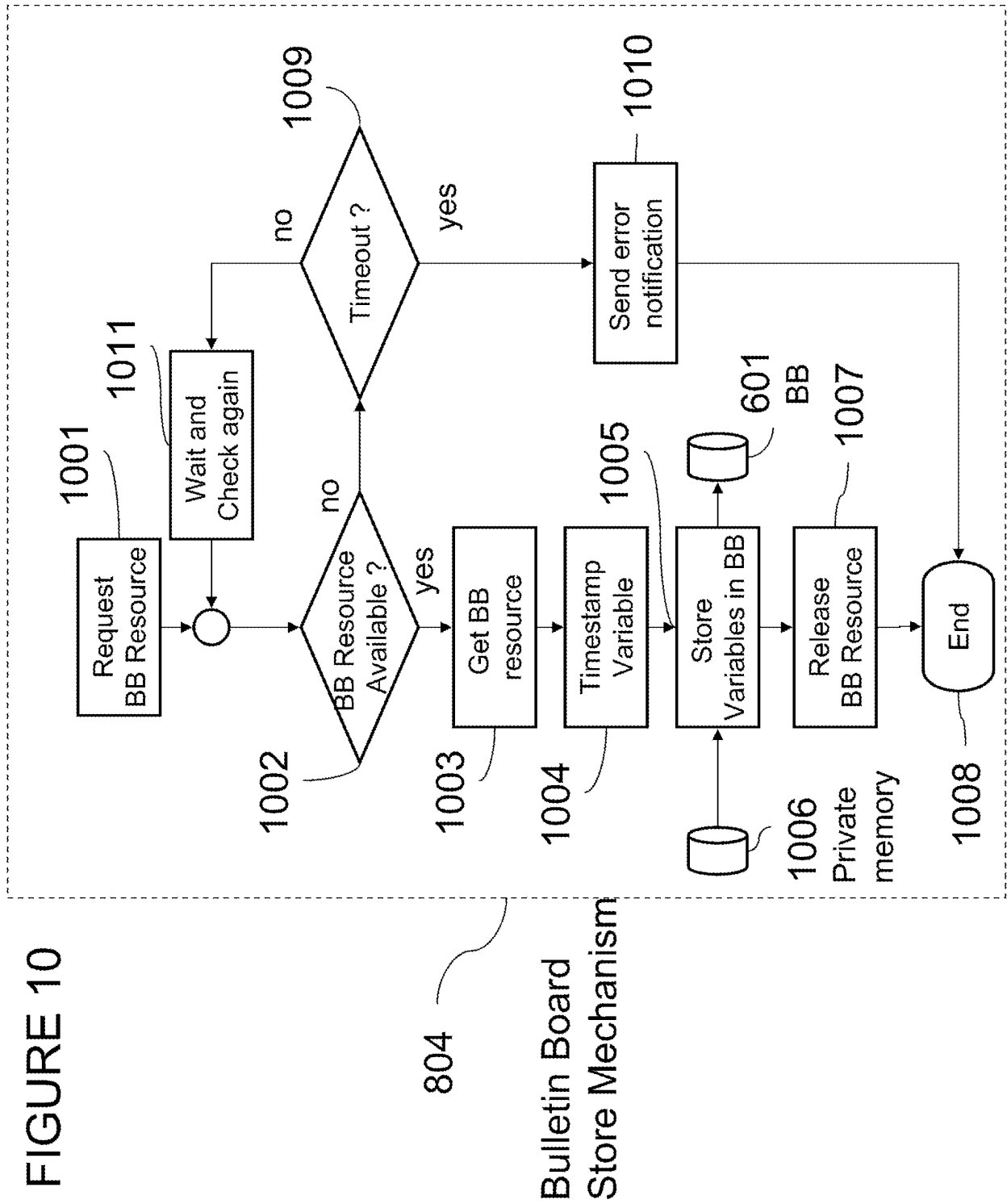


FIGURE 11

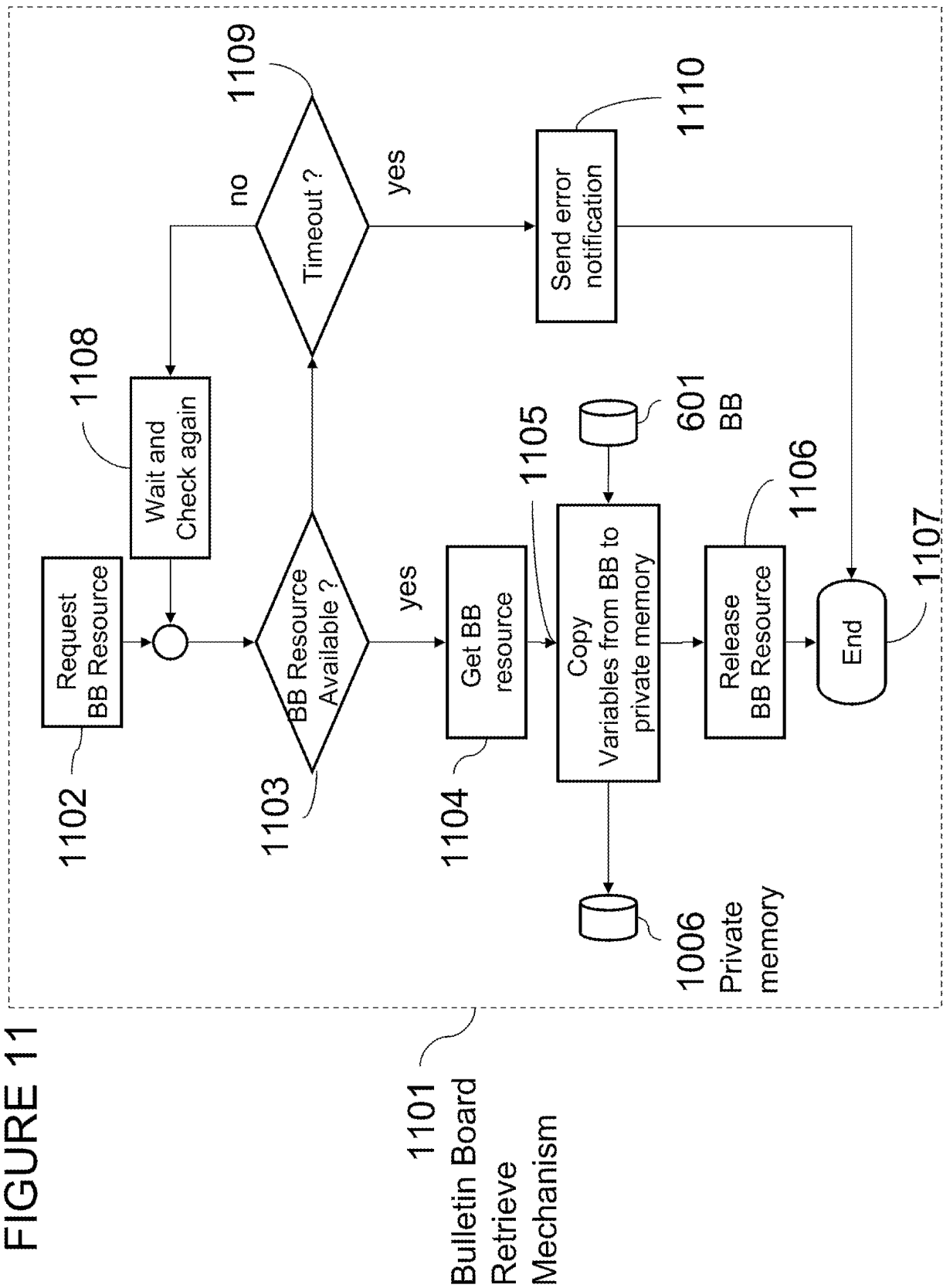
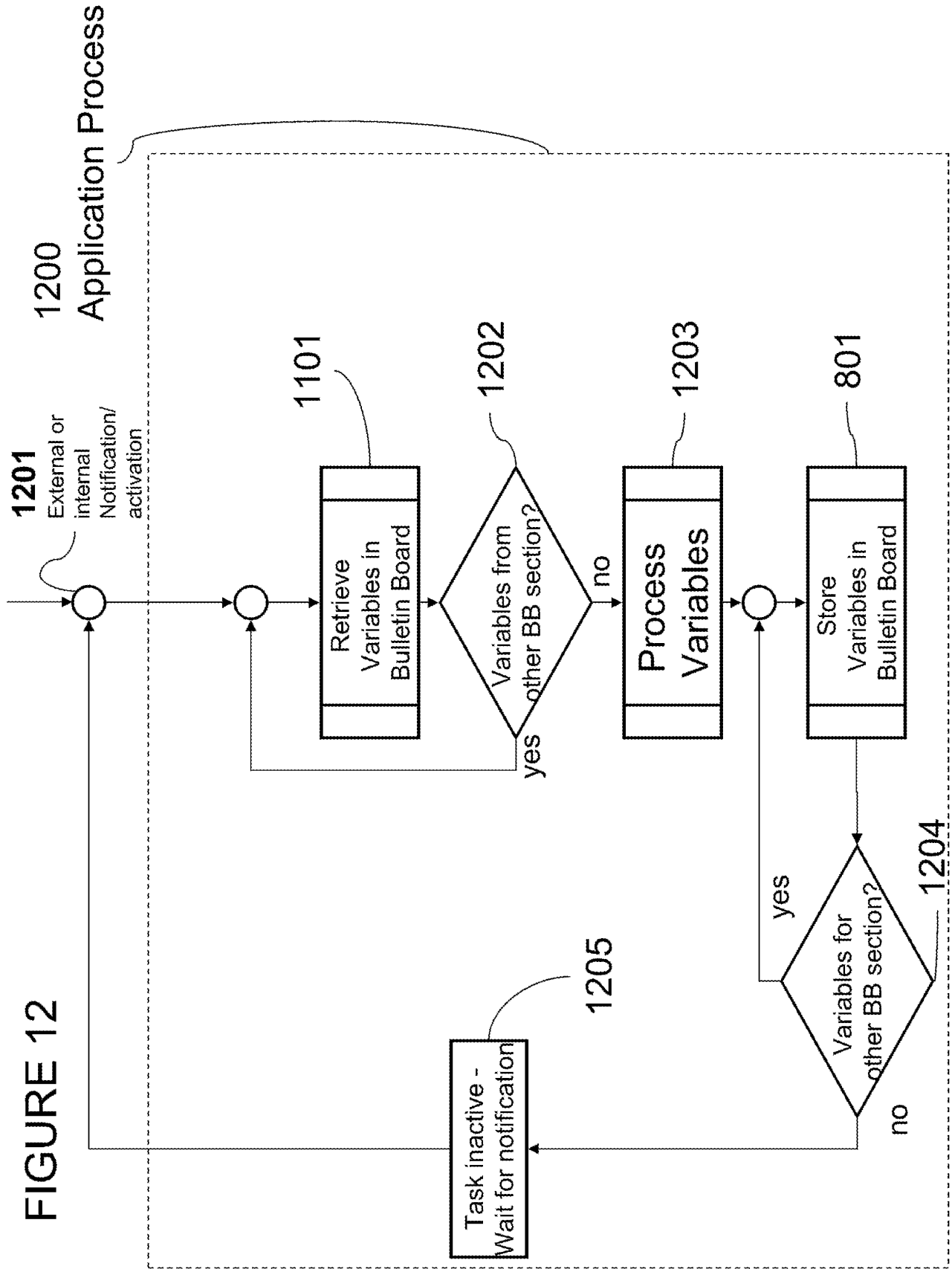
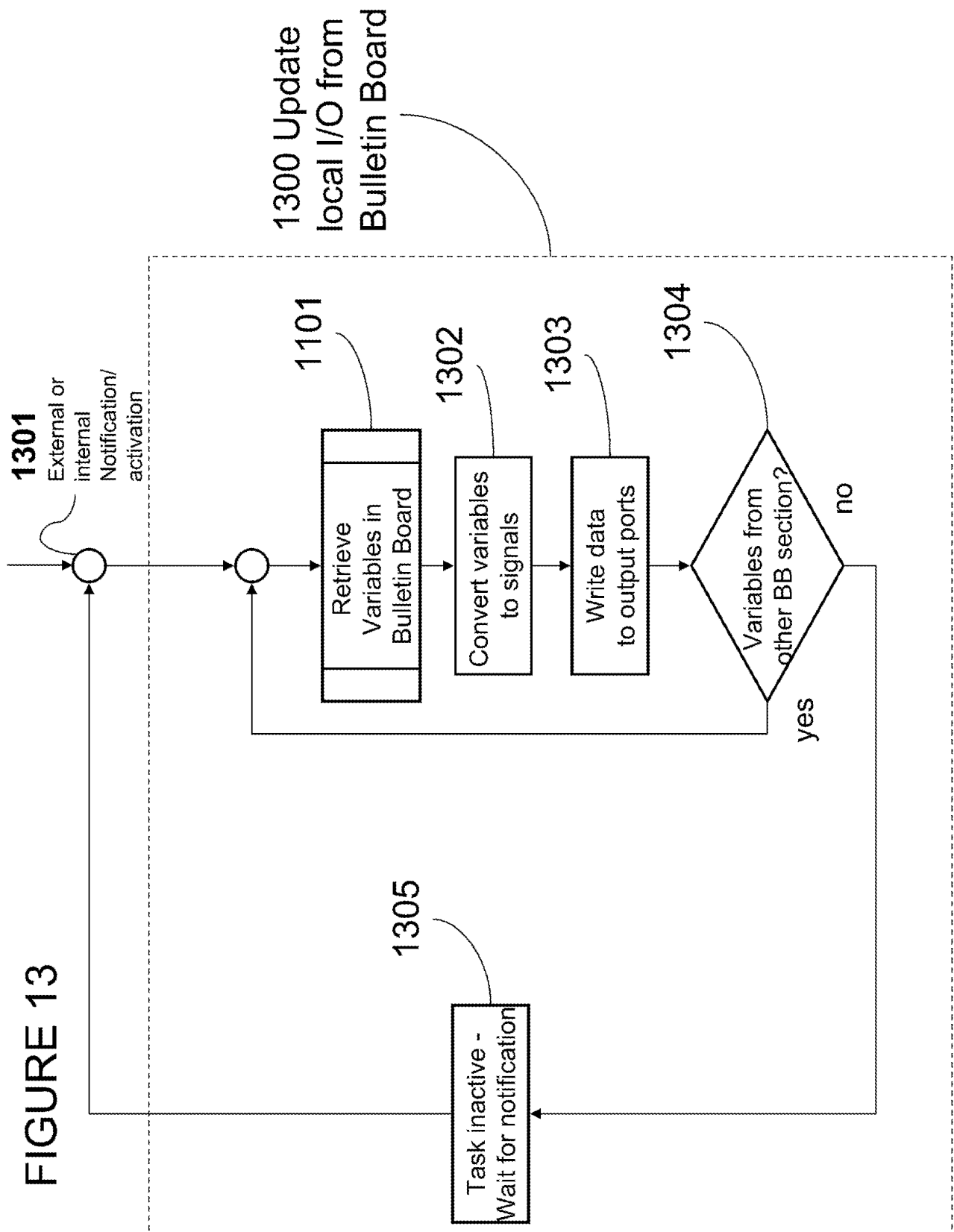
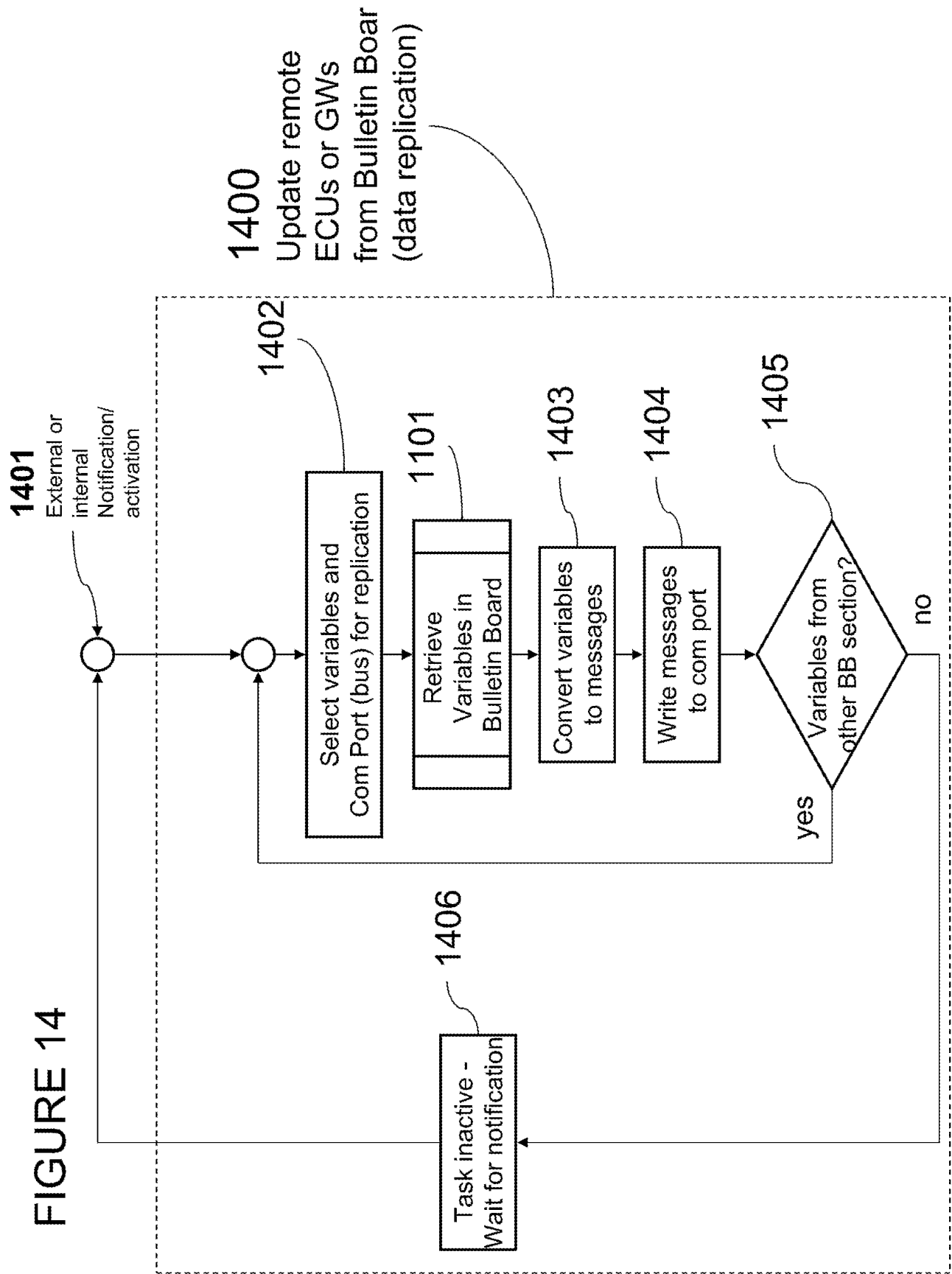
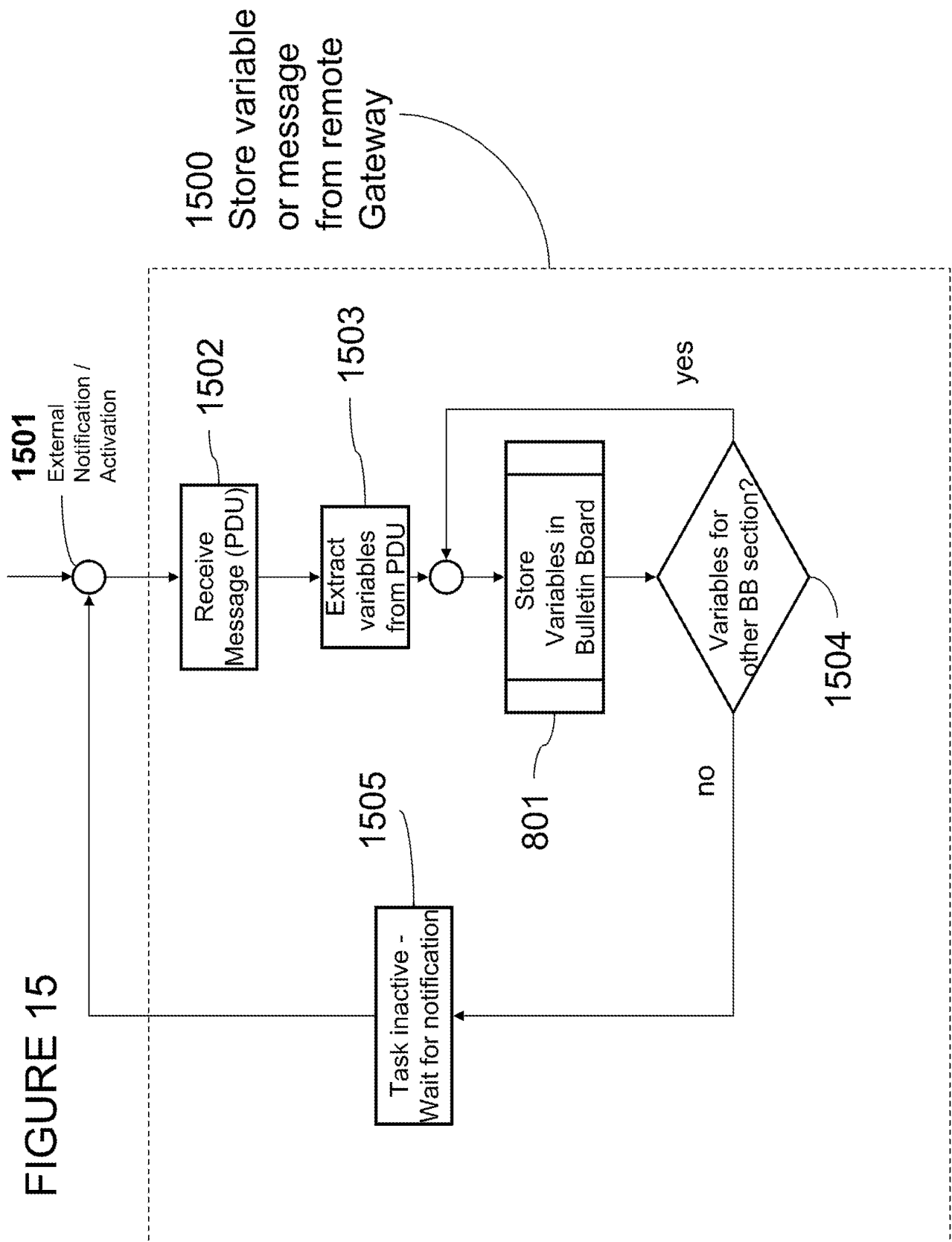


FIGURE 12









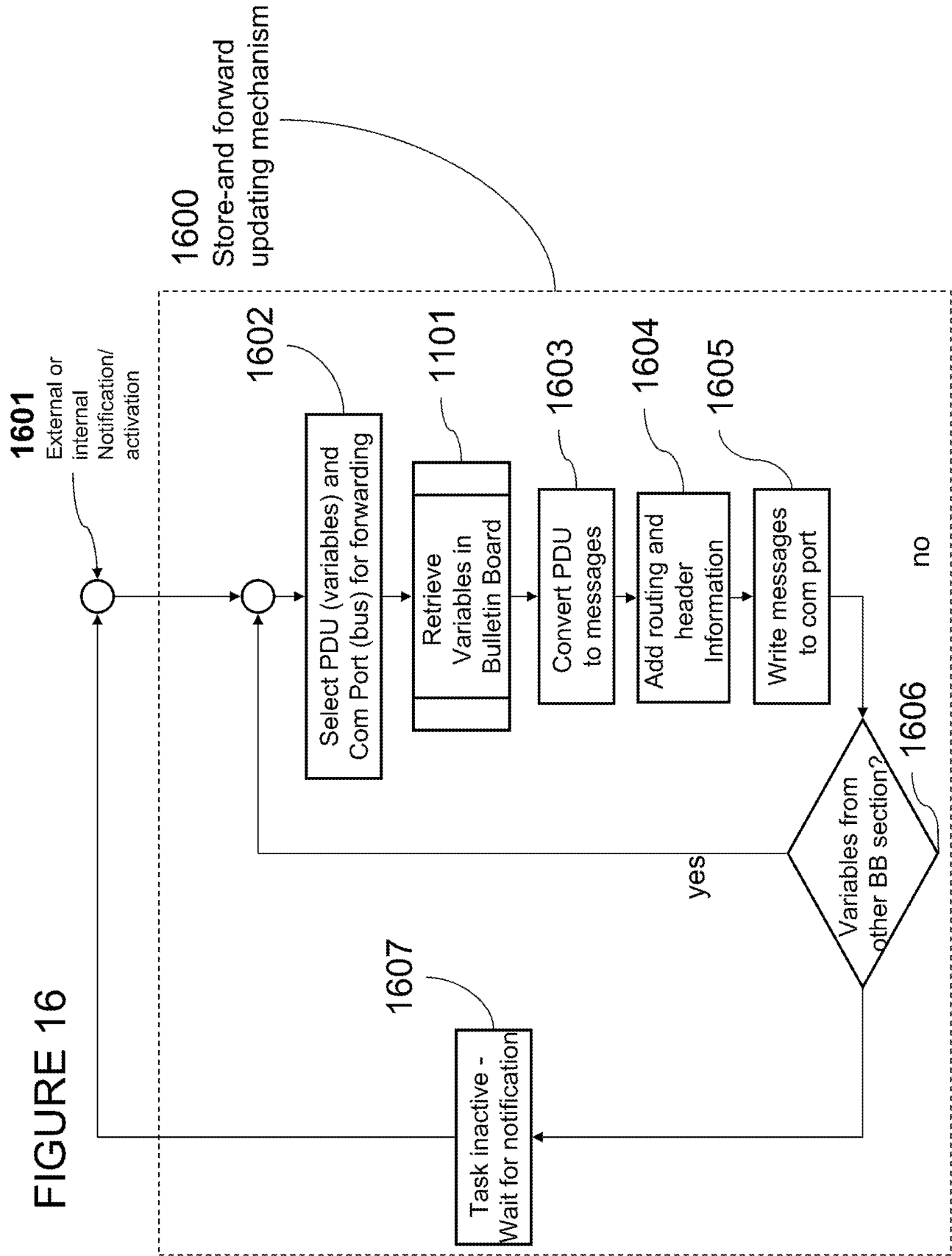


FIGURE 17

