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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/675,220	05/28/2024	Yehuda BINDER	BINDER-014-US28	4512

131926 7590 05/27/2025

May Patents Ltd. c/o Dorit Shem-Tov
P.O.B 7230
Ramat-Gan, 5217102
ISRAEL

EXAMINER	
MEKY, MOUSTAFA M	

ART UNIT	PAPER NUMBER
2457	

NOTIFICATION DATE	DELIVERY MODE
05/27/2025	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):

dorit.shemtov@gmail.com
uspto.may.patents@gmail.com
ybybyb1@gmail.com

APPLICATION NO.	ISSUE DATE	PATENT NO.
18/675,220	27-May-2025	12316706

May Patents Ltd. c/o Dorit Shem-Tov
P.O.B 7230
Ramat-Gan, 5217102
ISRAEL

EGRANT NOTIFICATION

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

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

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/675,220	05/27/2025	12316706	BINDER-014-US28	4512

131926 7590 05/14/2025

May Patents Ltd. c/o Dorit Shem-Tov
P.O.B 7230
Ramat-Gan, 5217102
ISRAEL

ISSUE NOTIFICATION

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

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

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

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

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

Applicant will be able to obtain more detailed information by accessing the Patent Center (https://patentcenter.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

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

Yehuda BINDER, Ramat Gan, ISRAEL;
Benjamin MAYTAL, Mevasseret Zion, ISRAEL;

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

May Patents Ltd., Hod Hasharon, ISRAEL;

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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18675220
	Filing Date	2024-05-28
	First Named Inventor	Yehuda BINDER
	Art Unit	2457
	Examiner Name	Meky
	Attorney Docket Number	BINDER-014-US28

Change(s) applied to document.
/CLY
4/26/2025

	9	7047196		05/2006 ~~2001-02-16~~	Theodore Calderone et al.	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
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If you wish to add additional Foreign Patent Document citation information please click the Add button Add

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

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EXAMINER SIGNATURE

Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

*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.

EFS Web 2.1.18

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

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PATENT AND TRADEMARK OFFICE

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/675,220	**04/24/2025 08:03:21 AM Z ET**	**BINDER-014-US28**

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4512	FILED BY	Dorit Binder
PATENT CENTER #	70139730	AUTHORIZED BY	Yehuda Binder
CUSTOMER #	131926	FILING DATE	05/28/2024
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Yehuda BINDER

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 506726	**E20254N904079409**	**Dorit Binder**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
2501	UTILITY ISSUE FEE	516.00	1	516.00
			TOTAL AMOUNT:	**$516.00**

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

PART B – FEE(S) TRANSMITTAL

Complete and send this form, together with the applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

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

By fax, send to: (571) 273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

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

May Patents Ltd.

c/o Dorit Shem-Tov

P.O.B. 7230

Ramat-Gan 5217102,

Israel

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 the USPTO patent electronic filing system or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
April 24, 2025 (Date)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
18/675,220	05/28/2024	Yehuda BINDER	BINDER-014-US28	4512

TITLE OF INVENTION:

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$516	$0	$0	$516	07/22/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
MOUSTAFA M MEKY	2457	348/077.000

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

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

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-09 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. May Patents Ltd. c/o Do
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: May Patents Ltd.

(B) RESIDENCE: (CITY and STATE or COUNTRY): HOD-HASHARON, Israel 45103

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

4a. Fees Submitted: ☒ Issue Fee ☐ Publication Fee (if required)

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

☐ Electronic Payment via the USPTO patent electronic filing system ☐ 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. 506726

5. Change of Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29. NOTE: Absent a valid Certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

☐ Applicant asserting small entity status. See 37 CFR 1.27. NOTE: If the application was previously under micro entity status, checking this box will be taken as a notification of loss of entitlement to micro entity status.

☐ Applicant changing to regular undiscounted fee status. NOTE: Checking this box will be taken as 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 /Yehuda Binder/ Date April 24, 2025

Typed or printed name Yehuda BINDER Registration No. 73,612

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

Routine uses of the information in this record may include disclosure to:

1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;

2) a federal, state, local, or international agency, in response to its request;

3) a contractor of the USPTO having need for the information in order to perform a contract;

4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;

5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;

6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;

7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;

8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c));

9) the Office of Personnel Management (OPM) for personnel research purposes; and

10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

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

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/675,220	**04/24/2025 08:03:21 AM Z ET**	**BINDER-014-US28**

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4512	FILED BY	Dorit Binder
PATENT CENTER #	70139730	FILING DATE	05/28/2024
CUSTOMER #	131926	FIRST NAMED INVENTOR	Yehuda BINDER
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Yehuda Binder

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
ptol85b.pdf	2	Issue Fee Payment (PTO-85B)	245 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
ptol85b.pdf	CFC81E818FB0A80746AFC8A356260B3B8723CCB0AA943DA6 09AEC4B87AC52F23AF4E8041D4997E268E2EE8AE54236AB24 595C71DFA0E25B25A1FC1EED7226E47

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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NOTICE OF ALLOWANCE AND FEE(S) DUE

131926 7590 04/22/2025

May Patents Ltd. c/o Dorit Shem-Tov
P.O.B 7230
Ramat-Gan, 5217102
ISRAEL

EXAMINER
MEKY, MOUSTAFA M

ART UNIT	PAPER NUMBER
2457	

DATE MAILED: 04/22/2025

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/675,220	05/28/2024	Yehuda BINDER	BINDER-014-US28	4512

TITLE OF INVENTION: SYSTEM AND METHOD FOR SERVER BASED CONTROL

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$516	$0.00	$0.00	$516	07/22/2025

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

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

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

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

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

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

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

131926 7590 04/22/2025
May Patents Ltd. c/o Dorit Shem-Tov
P.O.B 7230
Ramat-Gan, 5217102
ISRAEL

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 the USPTO patent electronic filing system 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.
18/675,220	05/28/2024	Yehuda BINDER	BINDER-014-US28	4512

TITLE OF INVENTION: SYSTEM AND METHOD FOR SERVER BASED CONTROL

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$516	$0.00	$0.00	$516	07/22/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
MEKY, MOUSTAFA M	2457	348-077000

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

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

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

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

1_____
2_____
3_____

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

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

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

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

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

❑ Electronic Payment via the USPTO patent electronic filing system ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

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

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

❑ Applicant certifying micro entity status. See 37 CFR 1.29
NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

❑ Applicant asserting small entity status. See 37 CFR 1.27
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

❑ Applicant changing to regular undiscounted fee status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/675,220	05/28/2024	Yehuda BINDER	BINDER-014-US28	4512

131926 7590 04/22/2025

May Patents Ltd. c/o Dorit Shem-Tov
P.O.B 7230
Ramat-Gan, 5217102
ISRAEL

EXAMINER	
MEKY, MOUSTAFA M	
ART UNIT	PAPER NUMBER
2457	

DATE MAILED: 04/22/2025

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

Routine uses of the information in this record may include disclosure to:

1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;
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3) a contractor of the USPTO having need for the information in order to perform a contract;
4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c));
9) the Office of Personnel Management (OPM) for personnel research purposes; and
10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

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

Notice of Allowability	Application No. 18/675,220	Applicant(s) BINDER et al.	
	Examiner Moustafa M Meky	Art Unit 2457	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 the approved terminal disclimer filed 04/01/2025.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3. ☑ The allowed claim(s) is/are 1-29 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

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

   Certified copies:

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

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

   * Certified copies not received: _____ .

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

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

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

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

Attachment(s)

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

/MOUSTAFA M MEKY/
Primary Examiner, Art Unit 2457

Notice of Pre-AIA or AIA Status

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

Detailed Action

1. Claims 1-29 are allowable in view of the prior art of record.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance: None of the prior art of record taken singularly or in combination teaches or suggests a client device for use with a Wireless Local Area Network (WLAN) in a building and with a controlled device that comprises a second actuator in the building, the client device comprising: a WLAN transceiver for communicating over the WLAN; a microphone for capturing first and second human voice data; and a first actuator in the client device, wherein the client device is configured to:

sending, over the Internet via the WLAN, the captured first and second human voice data to an Internet-connected server device external to the building;

receiving, from the server device over the Internet via the WLAN, first and second messages, in response to the sending of the captured first and second human voice data;

operating the first actuator in response to the received first message; and

sending, to the controlled device over the WLAN, a control message in response to the received second message, and wherein the client device is addressable in the WLAN and in the Internet using an Internet Protocol (IP) address.

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

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Moustafa M Meky whose telephone number is (571)272-4005. The examiner can normally be reached Monday-Friday 9AM-5PM.

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, Ario Etienne can be reached on 571-272-4001. 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.

/MOUSTAFA M MEKY/
Primary Examiner, Art Unit 2457

04/16/2025

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/675,220	BINDER et al.
	Examiner	Art Unit
	Moustafa M Meky	2457

CPC - Searched*		
Symbol	**Date**	**Examiner**
H04L 67/12	03/14/2025	MMM
B60Y 2200/11, 2200/12, 2200/13, 2200/30, 2200/40, 2200/50, 2200/90	03/14/2025	MMM

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
709	200	03/14/2025	MMM

* 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**
WEST SEARCH ATTACH	03/16/2025	MMM
GOOGLE PATENTS ATTACH	03/16/2025	MMM
GOOGLE NPL ATTACH	03/16/2025	MMM
WEST SEARCH ATTACH	04/16/2025	MMM
GOOGLE PATENTS ATTACH	04/16/2025	MMM
GOOFGLE NPL ATTACH	04/16/2025	MMM

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/675,220	BINDER et al.
	Examiner	Art Unit
	Moustafa M Meky	2457

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
H04L	67/12	04/16/2025	MMM
B60Y	2200/11, 2200/12, 2200/13, 2200/30, 2200/40, 2200/50, 2200/90	04/16/2025	MMM

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/675,220	BINDER et al.
	Examiner	**Art Unit**
	Moustafa M Meky	2457

CPC						
Symbol					**Type**	**Version**
H04L	/	67	/	12	F	2013-01-01
G07C	/	3	/	02	I	2013-01-01
Y04S	/	40	/	18	A	2018-05-01
B60K	/	31	/	00	A	2013-01-01
B60K	/	31	/	18	A	2013-01-01
B60Y	/	2200	/	11	A	2013-01-01
B60Y	/	2200	/	12	A	2013-01-01
B60Y	/	2200	/	126	A	2013-01-01
B60Y	/	2200	/	13	A	2013-01-01
B60Y	/	2200	/	30	A	2013-01-01
B60Y	/	2200	/	40	A	2013-01-01
B60Y	/	2200	/	50	A	2013-01-01
B60Y	/	2200	/	90	A	2013-01-01
G06Q	/	2240	/	00	A	2013-01-01
G07C	/	5	/	008	A	2013-01-01
G08G	/	1	/	00	A	2013-01-01

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

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	29	
/MOUSTAFA M MEKY/ Primary Examiner, Art Unit 2457	16 April 2025	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	19

U.S. Patent and Trademark Office — Part of Paper No.: 20250416

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/675,220	BINDER et al.
	Examiner	**Art Unit**
	Moustafa M Meky	2457

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G06F	/	15	/	16

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
709	200

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

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 29	
/MOUSTAFA M MEKY/ Primary Examiner, Art Unit 2457 (Primary Examiner)	16 April 2025 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 19

U.S. Patent and Trademark Office — Part of Paper No.: 20250416

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/675,220	BINDER et al.
	Examiner	**Art Unit**
	Moustafa M Meky	2457

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

CLAIMS

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

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	29	
/MOUSTAFA M MEKY/ Primary Examiner, Art Unit 2457	16 April 2025	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	19

U.S. Patent and Trademark Office — Part of Paper No.: 20250416

Amazon EX1051 Page 23

Patents microphone and actuator and operated and server and (voice or talking)

microphone and actuator and operated server and (voice or talking)

About 52,437 results

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In-Ear loudspeaker mixed audio transparent system

US CN · CN106332030B · [illegible]

Priority 2016-01-19 · Filed 2017-01-18 · Granted 2019-10-18 · Published 2019-10-18

Entitled " In-Ear loudspeaker mixed audio transparent system " of the invention.When in-Ear speaker seal ear canal is isolated with ambient sound leakage, user content audio signal is converted into the sound being sent in the ear canal of the wearer of in-Ear loudspeaker.Acoustics or gas valve in ...

Vibrational devices as sound sensors



US · US10632368B2 · Ronit Roy Choudhury · Board Of Trustees Of The University Of Illinois

Priority 2017-05-17 · Filed 2018-05-16 · Granted 2020-04-21 · Published 2020-04-21

A device includes a coil and magnetic mass movable next to the coil in response to vibrations to generate a back electromotive force signal. An amplifier generates, from the back EMF signal, a vibration signal. A processing device converts the vibration signal to time-frequency domain signal as ...

Removing noise from audio



WO US · WO2012092562A2 · Jarrod Leichter · Google Inc.

Priority 2010-06-30 · Filed 2011-09-30 · Granted 2012-09-11 · Published 2012-09-11

The subject matter of this specification can be embodied in, among other things, a computer-implemented method for removing noise from audio that includes building a sound model that represents noises which result from activations of input controls of a computer device. The method further includes ...

Method and system for avoiding howling disturbance on conferences

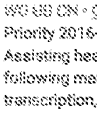


WO EP US · US11626093B2 · Alexander Lopez Moreira · Unify Patente Gmbh & Co. Kg

Priority 2019-07-25 · Filed 2019-07-25 · Granted 2023-04-11 · Published 2023-04-11

Method and System for avoiding howling disturbance especially on conferences, wherein the method comprising the steps of using a howling detector unit implemented inside a multipoint control unit to receive an audio stream input from a client, analyzing the audio input with the howling detector in ...

Hearing auxiliary with automatic speech transcription



WO US CN · CN108702580A · [illegible]

Priority 2016-02-19 · Filed 2017-02-09 · Published 2018-10-23

Assisting hearing equipment described herein realizes the hearing impaired user for carrying out ancillary equipment in the following manner:The text for the voice for indicating to be received in audio signal is generated using automatic speech transcription, then synthesis speech that text can ...

Multiple-source speech dialog input



US · US9767798B1 · Shirin Saleem · Amazon Technologies, Inc

Priority 2014-12-11 · Filed 2014-12-11 · Granted 2017-10-17 · Published 2017-10-17

A speech system may be configured to operate in conjunction with a stationary base device and a handheld remote device to receive voice commands from a user. A user may direct speech either to the base device or to the handheld device. In order to direct speech to the base device, the user first ...

Electronic accessory incorporating dynamic user-controlled audio muting ...



WO US · US11032675B2 · Juha YLÖNEN · AINA Wireless Finland Oy

Priority 2016-06-23 · Filed 2017-06-12 · Granted 2021-06-08 · Published 2021-06-08

Electronic accessory device capable of dynamically muting the microphone and/or speaker responsive to predefined user control input, and a communications terminal at least functionally connected to the accessory for the transfer of audio signals and related signaling. Related methods for execution ...

Methods and apparatus for autonomously managing communications using an ...



US · US8121653B2 · Stefan Johannes Walter Marti · Massachusetts Institute Of Technology

Priority 2005-11-19 · Filed 2005-11-18 · Granted 2012-02-21 · Published 2012-02-21

Apparatus for handling an incoming telephone call including a call processor coupled to a wired or wireless telephone network for receiving an incoming telephone call directed to a called person, a conversation detector for determining whether a conversation is currently taking place between said ...

Information processing system and recording medium



WO EP US CN JP • WO2014010250A1 • 株式 会一郎 • ソニー株式会社
Priority 2012-07-13 • Filed 2013-04-19 • Published 2014-01-16
[Problem] To provide an information processing system and a recording medium in which the space around a user can be mutually linked to other spaces. [Solution] An information processing system provided with: a recognition unit for recognizing a predetermined subject on the basis of signals ...

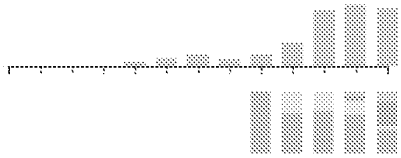
Ear-borne audio device conversation recording and compressed data transmission



US • US10412536B2 • Kinuko Masaki • Smartear, Inc
Priority 2017-05-18 • Filed 2018-05-17 • Granted 2019-09-10 • Published 2019-09-10
An embodiment of the invention provides a wireless ear-borne audio device that may be configured in a variety of ways, including, but in no way limited to a device for recording audio information and storing the audio information for later replay, and/or forwarding the audio information to another ...

Next > >> About 52,437 results

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Relative count of top 5 values

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microphone and actuator and operatec

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Ultra Portable Voice Amplifier Microphone and Speaker ...

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$35.99 · In stock · 4.4 (57) · 30-day returns

People also ask

What are the three types of microphone and their functions?

What type of microphone is best for voice over?

What is the difference between voice lift and voice reinforcement?

What is the main difference between a condenser microphone and a dynamic microphone?

Feedback

Shure
https://www.shure.com › en-US › applications › voice-l...

Voice Lift and Sound Reinforcement

A **voice** lift or **sound** reinforcement system enables every participant to hear whoever is **talking**, just as if they were near them – without the need to carry ...
Missing: ~~actuator~~ ~~operated~~ ~~server~~

DPA Microphones
https://www.dpamicrophones.com › mic-university › h...

How to mic the voice - technology and characteristics

This guide will inform you how to ensure optimal **voice** miking. We address **microphone** technology and characteristics, **vocal microphones** in practice and more.

JustAskJimVO -
https://justaskjimvo.studio › microphones

Microphones for Voiceover

Large diaphragm condenser microphones and specific shotgun microphones are generally the go-to choices for home voiceover recording studios.

Pro Acoustics USA
https://www.proacousticsusa.com › push-to-talk-microph...

Push To Talk Microphones

The Pure Resonance Audio PTT1 desktop push-to-talk microphone **provides excellent performance and reliability**, ideal for paging, announcements, general public ...
Free delivery · 30-day returns

Audio-Technica
https://www.audio-technica.com › en-ca › support › a-b ...

A Brief Guide to Microphones - What a Microphone Does

The **microphone** is a transducer – in other words, an energy converter. It senses **acoustic** energy (**sound**) and translates it into equivalent electrical energy.

YouTube · James Younger
5.9K+ views · 11 months ago

TOP 10 MICROPHONES FOR VOICE OVER

16:34

BEST MICROPHONE FOR VOICE OVER (2024). James Younger·14K views · 16:29 ... Microphone comparison AKG C414 VS Sennheiser MKH 416 (Voice Over).

14 key moments in this video

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Jonny Elwyn
https://jonnyelwyn.co.uk › Podcast

What is the Best Microphone for Recording Voice Over?

As a film editor I sometimes have to record Voice Over for use in my projects. **Here's how I chose the right microphone** for recording quality voice over on a ...
Missing: ~~actuator~~ ~~server~~

Wikipedia
https://en.wikipedia.org › wiki › Microphone

Microphone

A microphone, colloquially called a mic or mike, is a transducer that **converts sound into an electrical signal**. Microphones are used in many applications ...

Electret microphone · Ribbon microphone · Wireless microphone · Microphone array

Missing: ~~server~~ | Show results with: server

Quora

6 answers · 7 years ago

What is the difference between a microphone for speech ...

In general if you want the best recording of a **voice** possible, whether **talking** or singing, a large diaphragm condenser **mic** is the way to go.

6 answers · Top answer: Not much. In general if you want the best recording of a voice possible, whethe...

What is the difference between a **vocal microphone** and ... 2 answers Dec 12, 2023

Can **speaking** into a **microphone** or headset improve ... 1 answer Nov 22, 2022

More results from www.quora.com

Missing: ~~actuator~~ ~~server~~

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Best microphone and actuator and operated and server and voice or...	**push-to-talk conference** microphone **system**
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Results are personalized - Try without personalization

78259, San Antonio, TX - Based on your past activity - Update location

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Amazon EX1051 Page 28

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	35	"11128710"	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/14 04:10 PM
L2	108015	first adj3 (voice OR audio OR mircophone)	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:53 PM
L3	99376	second adj3 (voice OR audio OR mircophone)	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:53 PM
L4	48703	L2 WITH L3	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:53 PM
L5	306	L4 WITH actuator	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:53 PM
L6	9	L5 WITH internet	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:54 PM
L7	9	L5 WITH (internet OR WAN)	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:54 PM
L8	48777	(H04L67/12,B60Y2200/11,B60Y2200/12,B60Y2200/13,B60Y2200/30,B60Y2200/40,B60Y2200/50,B60Y2200/90) .CPC.	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:59 PM
L9	48010	first adj1 actuator	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:59 PM
L10	141	L8 AND L9	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:59 PM
L11	52611	second adj1 actuator	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 04:00 PM
L12	123	L10 AND L11	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 04:00 PM
L13	66	L12 AND (microphone OR voice OR audio)	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 04:00 PM
L14	62	L13 AND (WAN OR internet)	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 04:01 PM
L15	57	L14 NOT L6	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 04:01 PM
L16	324977	microphone near3 (voice OR audio OR talk$4)	(US-PGPUB; USPAT)	OR	ON	ON	2025/04/16 03:00 PM
L17	252839	actuator near3 (operat$4 OR run$4)	(US-PGPUB; USPAT)	OR	ON	ON	2025/04/16 03:01 PM
L18	118	L16 WITH L17	(US-PGPUB; USPAT)	OR	ON	ON	2025/04/16 03:01 PM
L19	54	L18 WITH server	(US-PGPUB; USPAT)	OR	ON	ON	2025/04/16 03:01 PM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/675,220	**04/07/2025 02:49:17 PM Z ET**	**BINDER-014-US28**

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4512	FILED BY	Dorit Binder
PATENT CENTER #	69897422	FILING DATE	05/28/2024
CUSTOMER #	131926	FIRST NAMED INVENTOR	Yehuda BINDER
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Yehuda Binder

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
40AB-Response-to-Office-Action.pdf	3	Amendment/Request for Reconsideration-After Non-Final Rejection	31 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
40AB-Response-to-Office-Action.pdf	4AFD6E3E2AEB194E3C4853F89E7BD25B4EE1E7742C2378EEC3DDC3FC303A3F649E6106AF766B9421659D78704042397EB5322F23FBD98A40A9419075CDE43775

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ATTY.'S DOCKET: BINDER-014-US26

In re Application of:	)	Confirmation No. 4512
	)	
Yehuda BINDER	)	Art Unit: 2457
	)	
Appln. No.: 18/675,220	)	Examiner: MOUSTAFA M MEKY
	)	
Filed: May 28, 2024	)	Washington, D.C.
	)	
For: System and method for Server-based control	)	April 7, 2025
	)	

RESPONSE / AMENDMENT:

Honorable Commissioner for Patents
U.S. Patent and Trademark Office
Randolph Building,
Mail Stop Amendments
401 Dulany Street
Alexandria, VA 22314

Sir:

In response to the Office Action of March 20, 2025 ("Action"):

Remarks/Arguments begin on page **2** of this paper.

REMARKS / ARGUMENTS

The examiner's action dated March 20, 2025 ("Action") has been received and its contents carefully noted.

An e-TD was filed to overcome the Double Patenting rejection.

The absence of a reply to a specific rejection, issue, or comment, does not signify agreement with that rejection, issue, or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims that have not been expressed.

Nothing in this reply should be understood as conceding any issue with regard to any claim, except as specifically stated in this reply, and the amendment of any claims does not necessarily signify concession of unpatentability to the claim before its amendment.

In view of the foregoing, it is requested that all of the rejections be reconsidered and withdrawn and that the claims be considered allowable.

If the above arguments should not now place the application in the condition for allowance, the examiner is invited to call undersigned counsel to resolve any remaining issues.

Respectfully submitted,

By /Yehuda Binder/
Yehuda Binder
Registration No. 73,612

Tel: -781-747-6018
Fax: +972-9-7442619
Email: yehuda@maypatents.com

Amazon EX1051 Page 35

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/675,220	**04/01/2025 03:58:12 AM Z ET**	**BINDER-014-US28**

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4512	FILED BY	Yehuda Binder
PATENT CENTER #	69743306	AUTHORIZED BY	Yehuda Binder
CUSTOMER #	131926	FILING DATE	05/28/2024
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Yehuda BINDER

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 506726	**E202541458246503**	**Yehuda Binder**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
2814	STATUTORY DISCLAIMER, INCLUDING TERMINAL DISCLAIMER	183.00	1	183.00
			TOTAL AMOUNT:	**$183.00**

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

New Applications Under 35 U.S.C. 111

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

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C.

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

New International Application Filed with the USPTO as a Receiving Office

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TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A PRIOR PATENT

APPLICATION #	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET #
18675220	**05/28/2024**	**Yehuda BINDER**	**BINDER-014-US28**

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

✓	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
MAY PATENTS LTD.	100%
Total	**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)

Application #	Filing Date

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) 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 prior patent number(s)

Patent #
12010174
11128710

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) included with Electronic Terminal Disclaimer request.

Applicant claims the following entity status:
Small

I hereby declare that all statements made herein of my own knowledge are true and that all statemnts made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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

Signature	Name	Registration #
/Yehuda Binder/	Yehuda Binder	73612

---

* 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.

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Commissioner for Patents
United States Patent and Trademark Office
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APPROVAL LETTER

APPLICATION #	FILING DATE	APPLICANT/PATENT UNDER REEXAMINATION
18/675,220	05/28/2024	Yehuda BINDER

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Electronic terminal disclaimer filed on 04/01/2025

☑ Approved

This patent is subject to a Terminal Disclaimer

Approved / Disapproved by: Electronic Terminal Disclaimer automatically approved

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/675,220	**04/01/2025 03:58:12 AM Z ET**	**BINDER-014-US28**

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4512	FILED BY	Yehuda Binder
PATENT CENTER #	69743306	FILING DATE	05/28/2024
CUSTOMER #	131926	FIRST NAMED INVENTOR	Yehuda BINDER
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Yehuda Binder

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
petition-request.pdf	3	Terminal Disclaimer-Filed (Electronic)	44 KB
grantLetter.pdf	1	Terminal Disclaimer-Electronic-Approved	18 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
petition-request.pdf	96780E8745270A1B8EEC00801BB9AA944A8D73DB44A6C333F34C53B617AD96F062E49F4B9B309DEEC8620CC6D9B34C52C1EED5767984E628F2B62A1FBCA50218
grantLetter.pdf	6D7FA29AEC39682F065138C5E098FA741A71DBD39BF4B1860

0B9C8E7EA7F1F4ABFE7E6B99DA1BCBF1AD7E1C346B377537
50901382307984743D0E2900E39E481

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New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

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United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/675,220	05/28/2024	Yehuda BINDER	BINDER-014-US28	4512

131926 7590 03/20/2025

May Patents Ltd. c/o Dorit Shem-Tov
P.O.B 7230
Ramat-Gan, 5217102
ISRAEL

EXAMINER
MEKY, MOUSTAFA M

ART UNIT	PAPER NUMBER
2457	

NOTIFICATION DATE	DELIVERY MODE
03/20/2025	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):

dorit.shemtov@gmail.com
uspto.may.patents@gmail.com
ybybyb1@gmail.com

Office Action Summary	**Application No.** 18/675,220	**Applicant(s)** BINDER et al.	
	Examiner Moustafa M Meky	**Art Unit** 2457	**AIA (FITF) Status** No

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

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

Status

1)☑ Responsive to communication(s) filed on 05/28/2024.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

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

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-29 is/are pending in the application.

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

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-29 is/are rejected.

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

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

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

Application Papers

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

11)☑ The drawing(s) filed on 05/28/2024 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

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

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

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

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

Attachment(s)

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

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date See Continuation Sheet.

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

4) ☐ Other: _____.

Continuation of Attachment(s) 2) Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date: 05/28/2024 [15 entries} & 09/24/2024 & 12/26/2024 {2 entries} & 02/12/2025

Notice of Pre-AIA or AIA Status

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

Detailed Action

1. Claims 1-29 are presenting for examination.

Non-statutory double patenting rejection

2. 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 filing of a terminal disclaimer by itself is not a complete reply to a nonstatutory double patenting (NSDP) rejection. A complete reply requires that the terminal disclaimer be accompanied by a reply requesting reconsideration of the prior Office action. Even where the NSDP rejection is provisional the reply must be complete. See MPEP § 804, subsection I.B.1. For a reply to a non-final Office action, see 37 CFR 1.111(a). For a reply to final Office action, see 37 CFR 1.113(c). A request for reconsideration while not provided for in 37 CFR 1.113(c) may be filed after final for consideration. See MPEP §§ 706.07(e) and 714.13.

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The actual 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/apply/applying-online/eterminal-disclaimer.

3. Claims 1-19 are rejected on the ground of non-statutory double patenting as being unpatentable over claims 1-29 of U.S. Patent No. 12,010,174 & claims 1-20 of U.S. Patent No. 11,128,710. Although the claims at issue are not identical, they are not patentably distinct from each other because both the patents 174 & 710 anticipates the claimed invention as been shown in the table below

18/675,220	12,010,174	11,128,710
1. A client device for use with a Wireless Local Area Network (WLAN) in a building	1. A system for operating multiple actuators in response to captured human	1. A method for operating multiple actuators in response to captured human

and with a controlled device that comprises a second actuator in the building, the client device comprising: a WLAN transceiver for communicating over the WLAN; a microphone for capturing first and second human voice data; and a first actuator in the client device, wherein the client device is configured to: sending, over the Internet via the WLAN, the captured first and second human voice data to an Internet-connected server device external to the building; receiving, from the server device over the Internet via the WLAN, first and second messages, in response to the sending of the captured first and second human voice data;	voice data, for use with a wireless network in a building and with a controlled device that comprises a second actuator in the building, the system comprising: an Internet-connected server device external to the building configured for processing first and second human voice data, and to produce first and second messages respectively in response to the processing; a client device in the building configured to communicate with the controlled device and with the server device over the wireless network; a microphone in the client device for capturing the first and second human voice data; and a first actuator in the client device, wherein the system is operative for	voice data, for use with a client device and a controlled device in a building, each communicating over a wireless network, and for use with an Internet-connected server device external to the building, the method comprising: capturing, by a microphone in the client device, a first human voice data; sending to the server, by the client device via the wireless network, the captured first human voice data; receiving, by the server over the Internet, the captured first human voice data; processing, by the server, the captured first human voice data; responsive to the processing, sending a first message, by the server to the client device over the Internet; receiving,

operating the first actuator in response to the received first message; and sending, to the controlled device over the WLAN, a control message in response to the received second message, and wherein the client device is addressable in the WLAN and in the Internet using an Internet Protocol (IP) address.	sending to the server by the client device via the wireless network, the captured first and second human voice data, and wherein the system is further operative for receiving from the server the first and second messages in response to the sending, to operate the first actuator in the client device in response to the received first message, and to operate the second actuator in the controlled device in response to the received second message.	by the client device via the wireless network, the first message; operating a first actuator in the client device in response to the received first message; capturing, by the microphone in the client device, a second human voice data; sending to the server, by the client device via the wireless network, the captured second human voice data; receiving, by the server over the Internet, the captured second human voice data; processing, by the server, the captured second human voice data; responsive to the processing, sending a second message, by the server to the controlled device over the Internet; receiving, by the controlled device via the wireless network, the second

		message; and operating a second actuator in the controlled device in response to the received second message.
2. The client device according to claim 1, wherein the server device is configured for processing the first and second human voice data using a voice recognition algorithm for identifying a voice of a specific person.	2. The system according to claim 1, wherein the processing comprises performing a voice recognition algorithm for identifying the voice of a specific person.	2. The method according to claim 1, wherein the processing comprises performing a voice recognition algorithm for identifying the voice of a specific person.
3. The client device according to claim 1, further comprising a sensor that outputs sensor data that responds to a physical phenomenon, wherein the client device is further configured for sending to the server device, via the WLAN over the Internet, the	3. The system according to claim 1, wherein the client device further comprises a sensor that outputs sensor data that responds to a physical phenomenon, wherein the system is further configured for sending to the server, by the client device via the wireless network, the sensor data, and wherein the	3. The method according to claim 1, wherein the client device further comprises a sensor that outputs sensor data that responds to a physical phenomenon, wherein the method further comprising sending to the server, by the client device via the wireless network, the sensor data, and wherein the

30 sensor data, and wherein the first message is received in response to the sent sensor data	first message is sent by the server in response to the sensor data.	first message is sent by the server in response to the sensor data
4. The client device according to claim 3, wherein the sensor is a thermoelectric sensor that responds to a temperature or to a temperature gradient of an object using conduction, convection, or radiation, or wherein the sensor is a photoelectric sensor 5 that responds to a visible or an invisible light or gamma rays.	4. The system according to claim 3, wherein the sensor is a thermoelectric sensor that responds to a temperature or to a temperature gradient of an object using conduction, convection, or radiation, or wherein the sensor is a photoelectric sensor that responds to a visible or an invisible light or gamma rays.	4. The method according to claim 3, wherein the sensor is a thermoelectric sensor that responds to a temperature or to a temperature gradient of an object using conduction, convection, or radiation, or wherein the sensor is a photoelectric sensor that responds to a visible or an invisible light or gamma rays.
5. The client device according to claim 1, wherein each of the first and second actuators is configured for directly or indirectly affecting, changing, producing, or creating a physical phenomenon.	5. The system according to claim 1, wherein each of the first and second actuators is configured for directly or indirectly affecting, changing, producing, or creating a physical phenomenon.	5. The method according to claim 1, wherein each of the first and second actuators is directly or indirectly affecting, changing, producing, or creating a physical phenomenon.

6. The client device according to claim 5, wherein the physical phenomenon comprises temperature, humidity, pressure, audio, vibration, light, motion, sound, proximity, flow rate, electrical voltage, or electrical current.	6. The system according to claim 5, wherein the physical phenomenon comprises temperature, humidity, pressure, audio, vibration, light, motion, sound, proximity, flow rate, electrical voltage, or electrical current.	6. The method according to claim 5, wherein the physical phenomenon comprises temperature, humidity, pressure, audio, vibration, light, motion, sound, proximity, flow rate, electrical voltage, or electrical current.
7. The client device according to claim 1, wherein the client device comprises multiple microphones, and wherein the capturing comprises capturing, by the multiple microphones in the client device, the first and second human voice data.	7. The system according to claim 1, wherein the client device comprises multiple microphones, and wherein the capturing comprises capturing, by the multiple microphones in the client device, the human voice data.	7. The method according to claim 1, wherein the client device comprises multiple microphones, and wherein the capturing comprises capturing, by the multiple microphones in the client device, the human voice data.
8. The client device according to claim 7, wherein the multiple microphones are arranged as a directional microphones array operative to estimate a number, magnitude,	8. The system according to claim 7, wherein the multiple microphones are arranged as a directional microphones array operative to estimate a number, magnitude, frequency, Direction-Of-	8. The method according to claim 7, wherein the multiple microphones are arranged as a directional microphones array operative to estimate a number, magnitude, frequency, Direction-Of-

frequency, Direction- Of-Arrival (DOA), distance, or speed of a phenomenon impinging the microphones array.	Arrival (DOA), distance, or speed of a phenomenon impinging the microphones array.	Arrival (DOA), distance, or speed of a phenomenon impinging the microphones array.
9, The client device according to claim 1, wherein the microphone is an omnidirectional, unidirectional, or bidirectional microphone that is based on the sensing an incident sound-based motion of a diaphragm or a ribbon, or wherein the microphone comprises a condenser, an electret, a dynamic, a ribbon, a carbon, or a piezoelectric microphone.	9. The system according to claim 1, wherein the microphone is an omnidirectional, unidirectional, or bidirectional microphone that is based on the sensing an incident sound-based motion of a diaphragm or a ribbon, or wherein the microphone comprises a condenser, an electret, a dynamic, a ribbon, a carbon, or a piezoelectric microphone.	9. The method according to claim 1, wherein the microphone is an omnidirectional, unidirectional, or bidirectional microphone that is based on the sensing an incident sound-based motion of a diaphragm or a ribbon, or wherein the microphone comprises a condenser, an electret, a dynamic, a ribbon, a carbon, or a piezoelectric microphone.
10. The client device according to claim 1, further comprising a volatile or non-volatile memory for storing the IP address.	10. The system according to claim 1, wherein the client device is addressable in the wireless network or the Internet using an address stored in a volatile or non-	10. The method according to claim 1, wherein the client device or the controlled device are addressable in the wireless network or the Internet using an address

	volatile memory for uniquely identifying the respective device in the network.	stored in a volatile or non-volatile memory of the respective device for uniquely identifying the respective device in the network.
11. The client device according to claim 1, wherein the client device is further addressed by a Media Access Control (MAC) layer address that is MAC-48, Extended Unique Identifier (EUI) EUI-48, or EUI-64 address type	11. The system according to claim 10, wherein the address is a Media Access Control (MAC) layer address that is MAC-48, Extended Unique Identifier (EUI) EUI-48, or EUI-64 address type or wherein the address is a layer 3 address and is static or dynamic Internet Protocol (IP) address that is IPv4 or IPv6 type address.	11. The method according to claim 10, wherein the address is a Media Access Control (MAC) layer address that is MAC-48, Extended Unique Identifier (EUI) EUI-48, or EUI-64 address type or wherein the address is a layer 3 address and is static or dynamic Internet Protocol (IP) address that is IPv4 or IPv6 type address.
12. The client device according to claim 1, wherein the IP address is a static or dynamic Internet Protocol (IP) address that is IPv4 or IPv6o type address.	12. The system according to claim 1, wherein the wireless network is a Wireless Personal Area Network (WPAN), that is according to, or based on, Bluetooth™ or Institute of Electrical and	12. The method according to claim 1, wherein the wireless network is a Wireless Personal Area Network (WPAN), that is according to, or based on, Bluetooth™ or Institute of Electrical and

	Electronics Engineers (IEEE) 802.15.1-2005 standards, or wherein the WPAN is a wireless control network that is according to, or based on, Zigbee™, IEEE 802.15.4-2003, or Z-Wave™ standards.	Electronics Engineers (IEEE) 802.15.1-2005 standards, or wherein the WPAN is a wireless control network that is according to, or based on, Zigbee™, IEEE 802.15.4-2003, or Z-Wave™ standards.
13. The client device according to claim 1, wherein the WLAN is according to, or base on, Institute of Electrical and Electronics 10 Engineers (IFBEE) 802.11-2012, IEEE 802.11la, IEEE 802.11b, IEEE 802.11lg, IEEE 802.11n, or IERE 802.11lac.	13. The system according to claim 1, wherein the wireless network is a Wireless Local Area Network (WLAN) that is according to, or base on, IEEE 802.11-2012, IEEE 802.11a, IEEE 802.11b, Institute of Electrical and Electronics Engineers (IEEE) IEEE 802.11g, IEEE 802.11n, or IEEE 802.11ac.	13. The method according to claim 1, wherein the wireless network is a Wireless Local Area Network (WLAN) that is according to, or base on, IEEE 802.11-2012, IEEE 802.11a, IEEE 802.11b, Institute of Electrical and Electronics Engineers (IEEE) IEEE 802.11g, IEEE 802.11n, or IEEE 802.11ac.
14. The client device according to claim 1, wherein the WLAN uses an unlicensed radio frequency band that is an Industrial,	14. The system according to claim 1, wherein the wireless network uses a wireless communication over a licensed or an unlicensed radio frequency band, that is	14. The method according to claim 1, wherein the wireless network uses a wireless communication over a licensed or an unlicensed radio frequency band, that is

Scientific and Medical (ISM) radio band.	an Industrial, Scientific and Medical (ISM) radio band.	an Industrial, Scientific and Medical (ISM) radio band.
15. The client device according to claim 1, further configured for communicating over a cellular telephone network that is a Third Generation (3G) network that uses Universal Mobile Telecommunications Client device (UMTS), Wideband Code Division Multiple Access (W-CDMA) UMTS, High Speed Packet Access (HSPA), UMTS Time-Division Duplexing (TDD), CDMA2000 1xRTT, Evolution - Data Optimized (EV-DO), or a Global Client device for Mobile communications (GSM), Enhanced Data rates for GSM Evolution (EDGE) EDGE-Evolution, or wherein the cellular telephone network is a Fourth	15. The system according to claim 1, wherein the wireless network is a cellular telephone network that is a Third Generation (3G) network that uses Universal Mobile Telecommunications System (UMTS), Wideband Code Division Multiple Access (W-CDMA) UMTS, High Speed Packet Access (HSPA), UMTS Time-Division Duplexing (TDD), CDMA2000 1×RTT, Evolution-Data Optimized (EV-DO), or Global System for Mobile communications (GSM), Enhanced Data rates for GSM Evolution (EDGE) EDGE-Evolution, or wherein the cellular telephone network is a Fourth Generation (4G) network that	15. The method according to claim 1, wherein the wireless network is a cellular telephone network that is a Third Generation (3G) network that uses Universal Mobile Telecommunications System (UMTS), Wideband Code Division Multiple Access (W-CDMA) UMTS, High Speed Packet Access (HSPA), UMTS Time-Division Duplexing (TDD), CDMA2000 1×RTT, Evolution-Data Optimized (EV-DO), or Global System for Mobile communications (GSM), Enhanced Data rates for GSM Evolution (EDGE) EDGE-Evolution, or wherein the cellular telephone network is a Fourth Generation (4G) network that

Generation (4G) network that uses Evolved High Speed 25 Packet Access (HSPA+), Mobile Worldwide Interoperability for Microwave Access (WiMAX), Long-Term Evolution (LTE), LTE-Advanced, Mobile Broadband Wireless Access (MBWA), or is based on IEEE 802.20-2008.	uses Evolved High Speed Packet Access (HSPA+), Mobile Worldwide Interoperability for Microwave Access (WiMAX), Long-Term Evolution (LTE), LTE-Advanced, Mobile Broadband Wireless Access (MBWA), or is based on IEEE 802.20-2008.	uses Evolved High Speed Packet Access (HSPA+), Mobile Worldwide Interoperability for Microwave Access (WiMAX), Long-Term Evolution (LTE), LTE-Advanced, Mobile Broadband Wireless Access (MBWA), or is based on IEEE 802.20-2008.
16. The client device according to claim 1, wherein the controlled 30 device is integrated in, is part of, or is entirely included in, a household appliance having a primary function.	16. The system according to claim 1, wherein the controlled device is integrated in, is part of, or is entirely included in, a household appliance having a primary function.	16. The method according to claim 1, wherein the controlled device is integrated in, is part of, or is entirely included in, an appliance.
17. The client device according to claim 16, wherein the primary functionality of the appliance is associated with a food storage, handling, or preparation.	17. The system according to claim 16, wherein the primary functionality of the appliance is associated with food storage, handling, or preparation.	17. The method according to claim 16, wherein the primary functionality of the appliance is associated with food storage, handling, or preparation.

18. The client device according to claim 17, wherein the primary 5 function of the appliance is heating food, and wherein the appliance is a microwave oven, an electric mixer, a stove, an oven, or an induction cooker.	18. The system according to claim 17, wherein the primary function of the appliance is heating food, and wherein the appliance is a microwave oven, an electric mixer, a stove, an oven, or an induction cooker.	18. The method according to claim 17, wherein the primary function of the appliance is heating food, and wherein the appliance is a microwave oven, an electric mixer, a stove, an oven, or an induction cooker.
19. The client device according to claim 17, wherein the appliance is a refrigerator, a freezer, a food processor, a dishwasher, a food blender, a beverage maker, a coffeemaker, or an iced-tea maker.	19. The system according to claim 17, wherein the appliance is a refrigerator, a freezer, a food processor, a dishwasher, a food blender, a beverage maker, a coffeemaker, or an iced-tea maker.	19. The method according to claim 17, wherein the appliance is a refrigerator, a freezer, a food processor, a dishwasher, a food blender, a beverage maker, a coffeemaker, or an iced-tea maker.
20. The client device according to claim 16, wherein the primary function of the appliance is associated with an environmental control, and the appliance is part of a Heating, Ventilation	20. The system according to claim 16, wherein the primary function of the appliance is associated with environmental control, and the appliance is part of a	20. The method according to claim 16, wherein the primary function of the appliance is associated with environmental control, and the appliance is part of a

and Air Conditioning (HVAC) system.	Heating, Ventilation and Air Conditioning (HVAC) system.	Heating, Ventilation and Air Conditioning (HVAC) system.
21. The client device according to claim 20, wherein the primary function of the appliance is associated with a temperature control, and wherein the appliance is an air conditioner or a heater.	21. The system according to claim 20, wherein the primary function of the appliance is associated with temperature control, and wherein the appliance is an air conditioner or a heater.	21. The method according to claim 20, wherein the primary function of the appliance is associated with temperature control, and wherein the appliance is an air conditioner or a heater.
22. The client device according to claim 16, wherein the primary function of the appliance is associated with cleaning, wherein the appliance primary function is associated with a clothes cleaning and the appliance is a washing machine, or wherein the appliance is a vacuum cleaner.	22. The system according to claim 16, wherein the primary function of the appliance is associated with cleaning, wherein the appliance primary function is associated with clothes cleaning and the appliance is a washing machine, or wherein the appliance is a vacuum cleaner.	22. The method according to claim 16, wherein the primary function of the appliance is associated with cleaning, wherein the appliance primary function is associated with clothes cleaning and the appliance is a washing machine, or wherein the appliance is a vacuum cleaner.
23. The client device according to claim 16, wherein the appliance is an answering machine, a telephone set, a home	23. The system according to claim 16, wherein the appliance is an answering machine, a telephone set, a home cinema system, a High	23. The method according to claim 16, wherein the appliance is an answering machine, a telephone set, a home cinema system, a High

cinema system, a High Fidelity (HiFi) system, a Compact Disc (CD) or Digital Video Disc (DVD) player, an electric furnace, a trash compactor, a smoke detector, a light fixture, or a dehumidifier.	Fidelity (HiFi) system, a Compact Disc (CD) or Digital Video Disc (DVD) player, an electric furnace, a trash compactor, a smoke detector, a light fixture, or a dehumidifier.	Fidelity (HiFi) system, a Compact Disc (CD) or Digital Video Disc (DVD) player, an electric furnace, a trash compactor, a smoke detector, a light fixture, or a dehumidifier.
24, The client device according to claim 1, wherein the first actuator is an electric light source for converting an electrical energy into light that emits a visible or non-visible light for illumination or indication, and the non-visible light is infrared, ultraviolet, X-rays, or gamma rays.	24. The system according to claim 1, wherein the first actuator is an electric light source for converting electrical energy into light that emits visible or non-visible light for illumination or indication, and the non-visible light is infrared, ultraviolet, X-rays, or gamma rays.	24. The method according to claim 1, wherein the first actuator is an electric light source for converting electrical energy into light that emits visible or non-visible light for illumination or indication, and the non-visible light is infrared, ultraviolet, X-rays, or gamma rays.
25. The client device according to claim 24, wherein the electric 5 light source comprises a lamp, an incandescent lamp, a gas discharge lamp, a fluorescent	25. The system according to claim 24, wherein the electric light source comprises a lamp, an incandescent lamp, a gas discharge lamp, a fluorescent lamp, a Solid-	25. The method according to claim 24, wherein the electric light source comprises a lamp, an incandescent lamp, a gas discharge lamp, a fluorescent lamp, a Solid-

lamp, a Solid-State Lighting (SSL), a Light Emitting Diode (LED), an Organic LED (OLED), a polymer LED (PLED), or a laser diode.	State Lighting (SSL), a Light Emitting Diode (LED), an Organic LED (OLED), a polymer LED (PLED), or a laser diode.	State Lighting (SSL), a Light Emitting Diode (LED), an Organic LED (OLED), a polymer LED (PLED), or a laser diode.
26. The client device according to claim 1, wherein the first 10 actuator is a motion actuator that causes a linear or rotary motion.	26. The system according to claim 1, wherein the first actuator is a motion actuator that causes linear or rotary motion.	26. The method according to claim 1, wherein the first actuator is a motion actuator that causes linear or rotary motion.
27. The client device according to claim 1, wherein the first actuator is a sounder for converting an electrical energy to an omnidirectional, unidirectional, or bidirectional pattern 15 emitted, audible or inaudible, sound waves.	27. The system according to claim 1, wherein the first actuator is a sounder for converting an electrical energy to omnidirectional, unidirectional, or bidirectional pattern emitted, audible or inaudible, sound waves.	27. The method according to claim 1, wherein the first actuator is a sounder for converting an electrical energy to omnidirectional, unidirectional, or bidirectional pattern emitted, audible or inaudible, sound waves.
28. The client device according to claim 27, wherein the sounder comprises an electromagnetic loudspeaker, a piezoelectric speaker, an electrostatic loudspeaker	28. The system according to claim 27, wherein the sounder comprises an electromagnetic loudspeaker, a piezoelectric speaker, an electrostatic loudspeaker (ESL), a ribbon or planar	28. The method according to claim 27, wherein the sounder comprises an electromagnetic loudspeaker, a piezoelectric speaker, an electrostatic loudspeaker (ESL), a ribbon or planar

(ESL), a ribbon or planar magnetic loudspeaker, or a bending wave loudspeaker, or wherein 20 the sounder comprises an electric bell, a buzzer, a chime, a whistle, or a ringer.	magnetic loudspeaker, or a bending wave loudspeaker, or wherein the sounder comprises an electric bell, a buzzer, a chime, a whistle, or a ringer.	magnetic loudspeaker, or a bending wave loudspeaker, or wherein the sounder comprises an electric bell, a buzzer, a chime, a whistle, or a ringer.
29. The client device according to claim 27, wherein the operating of the first actuator comprises playing a digital audio content that is pre-recorded or synthesized, or wherein the operating of 25 the first actuator comprises simulating the voice of a human being or generating music, or wherein the operating of the first actuator comprises sounding a syllable, a word, a phrase, a sentence, a short story, or a long story, using male or female voice.	29. The system according to claim 27, wherein the operating of the first actuator comprises playing digital audio content that is pre-recorded or synthesized, or wherein the operating of the first actuator comprises simulating the voice of a human being or generating music, or wherein the operating of the first actuator comprises sounding a syllable, a word, a phrase, a sentence, a short story, or a long story, using male or female voice.	29. The method according to claim 27, wherein the operating of the first actuator comprises playing digital audio content that is pre-recorded or synthesized, or wherein the operating of the first actuator comprises simulating the voice of a human being or generating music, or wherein the operating of the first actuator comprises sounding a syllable, a word, a phrase, a sentence, a short story, or a long story, using male or female voice.

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

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Moustafa M Meky whose telephone number is (571)272-4005. The examiner can normally be reached Monday-Friday 9AM-5PM.

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, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/MOUSTAFA M MEKY/
Primary Examiner, Art Unit 2457 03/16/2025

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	Examiner Moustafa M Meky	Art Unit 2457	Page 1 of 1

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*	B	US-11128710-B2	2021-09-21	Binder; Yehuda	G07C3/02	1/1
*	C	US-8948923-B2	2015-02-03	Scheider; Wolf-Henning	H04L12/66	370/395.5
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	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/675,220	BINDER et al.
	Examiner	Art Unit
	Moustafa M Meky	2457

CPC - Searched*		
Symbol	**Date**	**Examiner**
H04L 67/12	03/14/2025	MMM
B60Y 2200/11, 2200/12, 2200/13, 2200/30, 2200/40, 2200/50, 2200/90	03/14/2025	MMM

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
709	200	03/14/2025	MMM

* 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**
WEST SEARCH ATTACH	03/16/2025	MMM
GOOGLE PATENTS ATTACH	03/16/2025	MMM
GOOGLE NPL ATTACH	03/16/2025	MMM

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

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
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First Named Inventor	BINDER Yehuda
Art Unit	~~2457~~ Meky
Examiner Name	
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	First Named Inventor	BINDER Yehuda	
	Art Unit	~~2457~~ Meky	
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	Art Unit	~~2457~~ Meky
	Examiner Name	
	Attorney Docket Number	BINDER-~~40A (2018-04-26)-5~~ 014-US2

	4	20070004449		2007-04-01	Sham; John C.K.	
	5	20050216302		2005-29-09	Raji et al.	
	6	20020166124		2002-07-11	Gurantz et al.	
	7	20020019966		2002-14-02	Yagil et al.	
	8	20030139151		2003-24-07	Lifshitz et al.	
	9	20040032902		2004-19-02	Kolfman et al.	

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FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~[illegible]~~	18/675,220
	Filing Date	~~2018-03-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit		2457
	Examiner Name		Meky
	Attorney Docket Number	BINDER~~-101 (2018-04-26)-5~~014-US2	

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Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

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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.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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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	/Yehuda Binder/	Date (YYYY-MM-DD)	~~2018-11-27~~ 2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	18/675,220
	Filing Date	05-28-2024
	First Named Inventor	Yehuda BINDER
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7035898	B1	2006-04-25	Baker; Richard A	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20110254697	A1	2011-10-20	Casey; Steven M. et al.	
	2	20110130163	A1	2011-06-02	SABAN; Ofer et al.	
	3	20060097574	A1	2006-05-11	Gidge; Brett D. et al.	
	4	20070173202	A1	2007-07-26	Binder; Yehuda et al.	
	5	20050289124	A1	2005-12-29	Kaiser, Matthias et al.	

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	First Named Inventor	Yehuda BINDER
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	6	20040093219	A1	2004-05-13	Shin, Ho-Chul et al.		

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Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

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	Filing Date	
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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Name/Print	Yehuda BINDER	Registration Number	73612

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
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Application Number	18/675,220
Filing Date	05-28-2024
First Named Inventor	Yehuda Binder
Art Unit	2457 Meky
Examiner Name	
Attorney Docket Number	BINDER-014-US28

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8615374	B1	2013-12-24	Frederick M. Discenzo	
	2	4472656	A	1984-09-18	CORNELIS FRANX	
	3	8244405	B2	2012-08-14	Imin Kao	
	4	5696879	A	1997-12-09	TROY L. CLINE	
	5	5077512	A	1991-12-31	HAROLD J. WEBER	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20100281884	A1	2010-11-11	John Myron Rawski	

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	Filing Date	05-28-2024
	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	2	20120190292	A1	2012-07-26	Alan James Skrepcinski	
	3	20080291036	A1	2008-11-27	Robert Charles Richmond	
	4	20150222852	A1	2015-08-06	Ronald Carter	
	5	20100187832	A1	2010-07-29	Scott T. Holland	
	6	20090189981	A1	2009-07-30	Jon Siann	
	7	20130151200	A1	2013-06-13	Siew Kok Hui	
	8	20100039253	A1	2010-02-18	SHIHUA ZANG	
	9	20110047874	A1	2011-03-03	Scott B. Lowder	
	10	20090033522	A1	2009-02-05	Peter Nils Skillman	
	11	20180242859	A1	2018-08-30	Steven Francis LeBoeuf	
	12	20110282168	A1	2011-11-17	Alan Robert Weiss	

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	13	20130211858	A1	2013-08-15	Peter Ohnemus	
	14	20100195601	A1	2010-08-05	Yan Zhang	
	15	20120265026	A1	2012-10-08	Mohammad Shenasa	
	16	20020112726	A1	2002-08-22	Matthew F. Schmidt	
	17	20060206155	A1	2006-09-14	Tamir Ben-David	
	18	20110050216	A1	2011-03-03	Robert Thomas STONE	
	19	20090105605	A1	2009-04-23	Marcio Marc Abreu	
	20	20120179067	A1	2012-07-12	William Oren Wekell	
	21	20120130203	A1	2012-05-24	Stergios STERGIOU	
	22	20110034912	A1	2011-02-10	Bassel de Graff	
	23	20070208390	A1	2007-09-06	Jeffrey A. Von Arx	

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	24	20090005720	A1	2009-01-01	Lev Ludin	
	25	20100100004	A1	2010-04-22	Eugenio Johannes Wilhelmus van Someren	

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PTO/SB/08a (01-22)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	18675220
Filing Date	2024-05-28
First Named Inventor	Yehuda BINDER
Art Unit	2457
Examiner Name	Meky
Attorney Docket Number	BINDER-014-US28

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7693720		2010-04-06	Kennewick; Robert A. et al.	
	2	8015006		2011-09-06	Kennewick; Robert A. et al.	
	3	8195468		2012-06-05	Weider; Chris et al.	
	4	9263039		2016-02-16	Di Cristo; Philippe et al.	
	5	8073681		2011-12-06	Baldwin; Larry et al.	
	6	9626703		2017-04-18	Kennewick, Sr.; Michael R.	
	7	7818176		2010-10-19	Freeman; Tom et al.	
	8	8676224		2014-03-18	Louch; John O.	

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	Art Unit	2457
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	Attorney Docket Number	BINDER-014-US28

	9	7047196				

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	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

[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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	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

CERTIFICATION STATEMENT

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-12-26
Name/Print	Yehuda BINDER	Registration Number	73612

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	Application Number	18/675,220
	Filing Date	05-28-2024
	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6777856	B2	2004-08-17	Stefan Brechbühl et al	

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	1	20060230841	A1	2006-10-19	Vaidya Shrikrishna	
	2	20100187832	A1	2010-07-29	Scott T. Holland et al	
	3	20060176823	A1	2006-08-10	Leandro Barajas	
	4	20130101141	A1	2013-04-25	James Keith McElveen	
	5	20100265800	A1	2010-10-21	Graham Paul Eatwell	

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	6	20090236538	A1	2009-09-24	David L. FRANK	
	7	20130026947	A1	2013-01-10	Theodore F. Economy et al.	
	8	20110084651	A1	2011-04-14	Henry D. Caskey et al.	
	9	20100188251	A1	2010-07-29	Donald G. Panuce	
	10	20110121656	A1	2011-05-26	Dennis Hicks et al	
	11	20110118934	A1	2011-05-19	Larkin H. Lowrey	
	12	20020103576	A1	2002-08-01	Seiichi Takamura	

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Patents (first actuator) and (second actuator) and (voice or audio or microphone) and (WAN or internet)

(first actuator) (second actuator) (voice or audio or microphone) (WAN or internet) (first message) (second message);

About 37,979 results

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Vibration transmission device

JP · JP2001326968A · Toshihide Terai · Casio Kk

Priority 2000-05-12 · Filed 2000-05-12 · Published 2001-11-22

Similar PROBLEM TO BE SOLVED: To solve the problem that undesirable ambient sound included in an electrical signal is transmitted as noise in a speaker which converts vibration of opponent's words into an electrical signal, although there is an earphone, etc., in order to clearly hear voice such as words ...

System and method for server based control



US · US12081620B2 · Yehuda Binder · May Patents Ltd.

Priority 2012-01-09 · Filed 2021-08-23 · Granted 2024-09-03 · Published 2024-09-03

25. The method according to claim 1 , wherein the second actuator is an electric light source for converting electrical energy into light that emits visible or non-visible light for illumination or indication, and the non-visible light is infrared, ultraviolet, X-rays, or gamma rays. 26. The method ...

Systems and methods using audio input with a mobile device



US · US9338631S2 · Melvin L. Barnes, Jr. · Cula Consulting Limited Liability Company

Priority 2002-05-23 · Filed 2015-04-28 · Granted 2016-05-12 · Published 2016-05-12

Systems and methods of using audio input with a mobile device. A method comprises receiving content at a mobile device; annotating, at the mobile device, a selectable item of a user interface associated with the content with an annotation; receiving, at the mobile device, an audio input associated ...

System and method for establishing communication channels between on-board unit ...



US · US8718791S1 · Satheesh K. Addepalli · Cisco Technology, Inc.

Priority 2011-01-14 · Filed 2011-05-16 · Granted 2014-05-06 · Published 2014-05-06

A method includes establishing communication channels between an on-board unit (OBU) of a vehicle and a plurality of nodes, tagging each of a plurality of data from the plurality of nodes with a priority level, storing the plurality of data in a priority queue according to respective priority ...

Fitness monitoring



US · US9107586S2 · Biao Tran · Empire Ip Llc

Priority 2006-05-24 · Filed 2014-05-16 · Granted 2015-08-18 · Published 2015-08-18

A mobile system for a user includes a telephone having one or more sensors to capture fitness data or vital sign data, the telephone having a wireless transceiver coupled to the processor to communicate fitness or vital sign data over a personal area network; and a processor coupled to the ...

Folded camera with actuator for moving optics

WO EP US CN KR · CN113508583B · 닉 D 안젤로 · 폴 슈 리

Priority 2019-01-26 · Filed 2019-01-25 · Granted 2024-11-26 · Published 2024-11-26

The present disclosure relates to a folded camera having an actuator for moving optics. Various implementations include cameras with folding optics and lens shifting capabilities. In some examples, the folded optics arrangement of the camera may include one or more lens elements and an optical ...

Actuator module, camera module, and multifunction device for voice coil motor ...



WO US CN JP KR AU DE · KR102210891B1 · 리키요 케이, 요셉 리스, 아담 인크.

Priority 2012-12-20 · Filed 2013-12-19 · Granted 2021-02-02 · Published 2021-02-02

Some embodiments provide an apparatus for controlling motion of a camera component. In some embodiments, the device includes an actuator module. The actuator module includes a plurality of magnets. Each of the plurality of magnets is polarized such that the magnetic domains are substantially ...

Multi-layer flexure for supporting a motion image sensor



WO EP US CN KR · CN113748383B · 브루노 · 폴 슈 리

Priority 2019-03-28 · Filed 2020-03-27 · Granted 2023-07-11 · Published 2023-07-11

Some embodiments may include a multilayer flexure that may be used in an optical image stabilization voice coil motor (OIS VCM) actuator for a camera. The multi-layer flexure module may include a dynamic platform and a static platform and a multi-layer flexure arm mechanically connecting the ...

Mobile zoom system, method, and medium for stabilizing camera using multiple ...

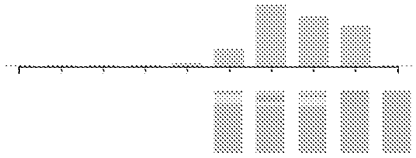


WO EP US CN KR • CN109302778B • 3-W-米勒 • 苹果公司
Priority 2015-09-30 • Filed 2016-08-31 • Granted 2021-08-24 • Published 2021-08-24
the camera system comprises a shared magnet holder to which the one or more magnets of the first camera unit and the one or more magnets of the second camera unit are attached for generating a magnetic field that can be used for generating motion in one or more of the first actuator and the second ..

Camera with folding optics having movable lens
WO EP US CN KR • CN118938811B • 3-W-米勒 • 苹果公司
Priority 2018-01-10 • Filed 2019-01-10 • Granted 2024-10-18 • Published 2024-10-18
The present disclosure relates to cameras having folding optics with movable lenses. Various implementations include a camera with folding optics and lens shifting capabilities. Some embodiments include Voice Coil Motor (VCM) actuator means to provide Autofocus (AF) and/or Optical Image ...

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Relative count of top 5 values

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

Application Number	18/675,220
Filing Date	05-28-2024
First Named Inventor	Yehuda Binder
Art Unit	3457 Meky
Examiner Name	
Attorney Docket Number	BINDER-014-US28

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8140658	B1	2012-03-20	Gelvin; David C. et al.	
	2	7844687	B1	2010-11-30	Gelvin; David C. et al.	
	3	7797367	B1	2010-09-14	Gelvin; David C. et al.	
	4	7020701	B1	2006-03-28	Gelvin; David C. et al.	
	5	6859831	B1	2005-02-22	Gelvin; David C. et al.	
	6	6832251	B1	2004-12-14	Gelvin; David C. et al.	
	7	6826607	B1	2004-11-30	Gelvin; David C. et al.	
	8	6735630	B1	2004-05-11	Gelvin; David C. et al.	

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	1	20100328023	A1	2010-12-30	Thomson; Matthew B.	
	2	20120253480	A1	2012-10-04	Abe; Yuuichi	
	3	20110035491	A1	2011-02-10	Gelvin; David C. et al.	
	4	20100201516	A1	2010-08-12	Gelvin; David C. et al.	
	5	20100148940	A1	2010-06-17	Gelvin; David C. et al.	
	6	20120016678	A1	2012-01-19	Gruber; Thomas Robert et al.	
	7	20140286348	A1	2014-09-25	Haddad; Wassim et al.	
	8	20130091254	A1	2013-04-11	Haddad; Wassim et al.	
	9	20080077425	A1	2008-03-27	Johnson; Michael W. et al.	

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	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	10	20120283894	A1	2012-11-08	Naboulsi; Mouhamad Ahmad	
	11	20170111158	A1	2017-04-20	Nagrath; Aditya	
	12	20070076593	A1	2007-04-05	Sakurai; Kohei et al.	
	13	20080068156	A1	2008-03-20	Shimokawa; Isao et al.	
	14	20020103576	A1	2002-08-01	Takamura, Seiichi et al.	
	15	20060217840	A1	2006-09-28	Uehigashi; Naoya	
	16	20110118888	A1	2011-05-19	White, II; Melvin Joseph	
	17	20150295788	A1	2015-10-15	Witzman; Kevin R. et al.	
	18	20140236384	A1	2014-08-21	YOSHIMURA; Kentaro et al.	
	19	20140188343	A1	2014-07-03	YOSHIMURA; Kentaro et al.	
	20	20120303216	A1	2012-11-29	YOSHIMURA; Kentaro et al.	

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	1							☐

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Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

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	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-05-28
Name/Print	Yehuda BINDER	Registration Number	73612

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

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

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

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

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

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

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
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Application Number	18675220
Filing Date	2024-05-28
First Named Inventor	Yehuda BINDER
Art Unit	2457
Examiner Name	Meky
Attorney Docket Number	BINDER-014-US28

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9396450	B2	2016-07-19	Gazdzinski; Mark J. et al.	
	2	8301158	B1	2012-10-30	Thomas; C. Douglass	
	3	9100728	B2	2015-08-04	Higgins; Timothy Alan et al.	
	4	8886482	B2	2014-11-11	Higgins; Timothy Alan et al.	
	5	8949075	B2	2015-02-03	Higgins; Timothy Alan et al.	
	6	9031583	B2	2015-05-12	Pereira; Mindy et al.	
	7	9369839	B2	2016-06-14	Manges; Barbara J.	
	8	7917285	B2	2011-03-29	Rothschild; Leigh M.	

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	First Named Inventor	Yehuda BINDER
	Art Unit	2457 Maky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	9	7683776	B2	2010-03-23	Glenn; Gregory M. et al.	
	10	6542819	B1	2003-04-01	Kovacs; Erno et al.	
	11	9712359	B2	2017-07-18	Snyder; Seth et al.	
	12	7952485	B2	2011-05-31	Schechter; Harry J. et al.	
	13	8248252	B2	2012-08-21	Schechter; Harry J. et al.	
	14	8547226	B2	2013-10-01	Schechter; Harry J. et al.	
	15	9857234	B2	2018-01-02	Schechter; Harry J. et al.	
	16	9541454	B2	2017-01-10	Schechter; Harry J. et al.	

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	1	20110304475	A1	2011-12-15	HIGGINS; Timothy Allan et al.	

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	Attorney Docket Number	BINDER-014-US28

	2	20110307203	A1	2011-12-15	HIGGINS; Timothy Allan et al.	
	3	20110307221	A1	2011-12-15	HIGGINS; Timothy Allan et al.	
	4	20100004857	A1	2010-01-07	Pereira; Mindy et al.	
	5	20160037295	A1	2016-02-04	Pereira; Mindy et al.	
	6	20050004752	A1	2005-01-06	Choi, Sang-on et al.	
	7	20150365792	A1	2015-12-17	Manges; Barbara J.	
	8	20160359651	A1	2016-12-08	Snyder; Seth et al.	
	9	20100127880	A1	2010-05-27	Schechter; Harry J. et al.	
	10	20120286969	A1	2012-11-15	Schechter; Harry J. et al.	
	11	20140223230	A1	2014-08-07	Schechter; Harry J. et al.	
	12	20180066996	A1	2018-03-08	Schechter; Harry J. et al.	

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	13	20170082498	A1	2017-03-23	Schechter; Harry J. et al.	

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Signature	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-09-24
Name/Print	Yehuda BINDER	Registration Number	73612

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	1	8909370		2014-12-09	Stiehl; Walter Dan et al.	
	2	7750223		2010-07-06	Ohshima; Osamu et al.	
	3	7062073		2006-06-13	Tumey; David M. et al.	

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	1	20060187034	A1	2006-08-24	Styers; Justin R. et al.	
	2	20120112538	A1	2012-05-10	Kesler; Morris P. et al.	
	3	20110067059	A1	2011-03-17	Johnston; Michael et al.	

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	Attorney Docket Number	BINDER-014-US28

	4	20110055292	A1	2011-03-03	Madau; Dinu Petre et al.	
	5	20110032952	A1	2011-02-10	Rochon; Michel et al.	
	6	20090294141	A1	2009-12-03	ROUSE; J. Paul et al.	
	7	20080154535	A1	2008-06-26	Sparks; Douglas Ray et al.	
	8	20070225873	A1	2007-09-27	Toya; Takayuki et al.	
	9	20070016328	A1	2007-01-18	Ziegler; Andrew et al.	
	10	20060237427	A1	2006-10-26	Logan; James D.	
	11	20060164208	A1	2006-07-27	Schaffzin; Richard A. et al.	
	12	20040129693	A1	2004-07-08	Hook, Roy E.	
	13	20020000092	A1	2002-01-03	Sharood, John N. et al.	
	14	20010049248	A1	2001-12-06	Choi, Kei Fung	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/675,220
	Filing Date	05-28-2024
	First Named Inventor	Yehuda BINDER
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	15	20030038017	A1	2003-02-27	Boyer, Curtis Elroy et al.		

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Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

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	Application Number	
	Filing Date	
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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).

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

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Signature	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-05-28
Name/Print	Yehuda BINDER	Registration Number	73612

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

Application Number	18675220
Filing Date	2024-05-28
First Named Inventor	Yehuda BINDER
Art Unit	2457
Examiner Name	Meky
Attorney Docket Number	BINDER-014-US28

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7693720		2010-04-06	Kennewick; Robert A. et al.	
	2	8015006		2011-09-06	Kennewick; Robert A. et al.	
	3	8195468		2012-06-05	Weider; Chris et al.	
	4	9263039		2016-02-16	Di Cristo; Philippe et al.	
	5	8073681		2011-12-06	Baldwin; Larry et al.	
	6	9626703		2017-04-18	Kennewick, Sr.; Michael R.	
	7	7818176		2010-10-19	Freeman; Tom et al.	
	8	8676224		2014-03-18	Louch; John O.	

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	First Named Inventor	Yehuda BINDER
	Art Unit	2457
	Examiner Name	Meky
	Attorney Docket Number	BINDER-014-US28

	9	7047196		2001-02-16	Theodore Calderone et al.	

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	Application Number	18675220
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	First Named Inventor	Yehuda BINDER
	Art Unit	
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	Attorney Docket Number	BINDER-014-US28

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First Named Inventor	Yehuda Binder
Art Unit	2457 Meky
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Attorney Docket Number	BINDER-014-US28

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	1	20030105389	A1	2003-06-05	Julianne Noonan	
	2	20070283005	A1	2007-12-06	Robert P. Beliles	
	3	20090198380	A1	2009-08-06	Scott Justin-Marl Friedman	
	4	20090224906	A1	2009-09-10	Lennart BALGARD	
	5	20100071053	A1	2010-03-18	Amir Ansari	

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	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	6	20120079149	A1	2012-03-29	David C. Gelvin	
	7	20130091279	A1	2013-04-11	Wassim Haddad	
	8	20130308581	A1	2013-11-21	Ahmadreza (Reza) Rofougaran	
	9	20150046582	A1	2015-02-12	David C. Gelvin	
	10	20160062330	A1	2016-03-03	Yuuichi Abe	
	11	20160344745	A1	2016-11-24	Michael W. Johnson	
	12	20030009271	A1	2003-01-09	Susumu Akiyama	
	13	20060111825	A1	2006-05-25	Minoru Okada	
	14	20070021847	A1	2007-01-25	Akihiko Hyodo	
	15	20070198144	A1	2007-08-23	William Robert Norris	
	16	20080100428	A1	2008-05-01	Sherry D. Price	

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	17	20090138136	A1	2009-05-28	Akihiro Natsume	
	18	20100030421	A1	2010-02-04	Kentaro YOSHIMURA	
	19	20100211258	A1	2010-08-19	Kohei SAKURAI	
	20	20110153149	A1	2011-06-23	Hong Seok Jeon	
	21	20140215491	A1	2014-07-31	Sateesh K. Addepalli	
	22	20080307075	A1	2008-12-11	Urano; Takehiro ; et al.	
	23	20090089065	A1	2009-04-02	Buck; Markus ; et al.	
	24	20170272316	A1	2017-09-21	Johnson; Michael W. ; et al.	
	25	20050273505	A1	2005-12-08	Kim, Byeong-Woo	
	26	20060212194	A1	2006-09-21	Breed; David S.	
	27	20070096565	A1	2007-05-03	Breed; David S. ; et al.	

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	28	20070176740	A1	2007-08-02	Aubertin; Jean-Pierre ; et al.	
	29	20080129475	A1	2008-06-05	Breed; David S. ; et al.	
	30	20080136670	A1	2008-06-12	Tengler; Steve ; et al.	
	31	20100207754	A1	2010-08-19	Shostak; Oleksandr T. ; et al.	
	32	20130139440	A1	2013-06-06	WECHS; Martin	

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

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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.

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

Application Number	18/675,220
Filing Date	05-28-2024
First Named Inventor	Yehuda Binder
Art Unit	2457 Meky
Examiner Name	
Attorney Docket Number	BINDER-014-US28

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	1	20040267385	A1	2004-12-30	Ronald R. Lingemann	
	2	20180253069	A1	2018-09-06	Reza Raji	
	3	20080215391	A1	2008-09-04	Kevin J. Dowling	
	4	20160218884	A1	2016-07-28	Matthew P. EBROM	
	5	20110251807	A1	2011-10-13	Patrick A. Rada	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/675,220
	Filing Date	05-28-2024
	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	6	20120228952	A1	2012-09-13	Katherine L. Hall	
	7	20140170275	A1	2014-06-19	Domenic Bordin	
	8	20150226439	A1	2015-08-13	Conrad S. Mikulec	
	9	20120325197	A1	2012-12-27	Ferdinand Villegas Legaspi	
	10	20090183729	A1	2009-07-23	Sydney Barkhouse	
	11	20070220907	A1	2007-09-27	Gregory A. Ehlers	
	12	20120093132	A1	2012-04-19	Ahmadreza (Reza) Rofougaran	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/675,220
	Filing Date	05-28-2024
	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

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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.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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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PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	35	"11128710"	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/14 04:10 PM
L2	108015	first adj3 (voice OR audio OR mircophone)	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:53 PM
L3	99376	second adj3 (voice OR audio OR mircophone)	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:53 PM
L4	48703	L2 WITH L3	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:53 PM
L5	306	L4 WITH actuator	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:53 PM
L6	9	L5 WITH internet	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:54 PM
L7	9	L5 WITH (internet OR WAN)	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:54 PM
L8	48777	(H04L67/12,B60Y2200/11,B60Y2200/12,B60Y2200/13,B60Y2200/30,B60Y2200/40,B60Y2200/50,B60Y2200/90) .CPC.	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:59 PM
L9	48010	first adj1 actuator	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:59 PM
L10	141	L8 AND L9	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 03:59 PM
L11	52611	second adj1 actuator	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 04:00 PM
L12	123	L10 AND L11	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 04:00 PM
L13	66	L12 AND (microphone OR voice OR audio)	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 04:00 PM
L14	62	L13 AND (WAN OR internet)	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 04:01 PM
L15	57	L14 NOT L6	(US-PGPUB; USPAT; EPO)	OR	ON	ON	2025/03/16 04:01 PM

PE2E SEARCH - Search History (Interference)

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

Application Number	~~18793624~~ 18/675,220
Filing Date	~~2024-05-01~~ 05-28-2024
First Named Inventor	BINDER Yehuda
Art Unit	~~2457~~ Meky
Examiner Name	
Attorney Docket Number	BINDER~~-101 (2018-04-02)-3~~ 014-US2

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7499239		2009-03-03	Chang; Michael	
	2	6285761		2001-04-09	Patel et al.	
	3	7512645		2009-31-03	Pitz et al.	
	4	7124157		2006-17-10	Ikake; Katsunori	
	5	4905176		1990-27-02	Schulz; Raymond A.	
	6	4853884		1989-01-08	Brown et al.	
	7	7145933		2006-05-12	Szajnowski; Wieslaw Jerzy	
	8	8214070		2012-03-07	Grossmann et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~18738631~~ 18/675,220
	Filing Date	~~2015-03-31~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	~~2457~~ Meky
	Examiner Name	
	Attorney Docket Number	BINDER~~.40A (2018.04.26).~~014-US2

	9	8180492		2012-15-05	Steinberg; John Douglas	
	10	6535243		2003-18-03	Tullis; Barclay J.	
	11	6552743		2003-22-04	Rissman; Paul	
	12	6786332		2004-07-09	Cook; Charles I.	
	13	5666159		1997-09-09	Parulski et al.	
	14	7327385		2008-05-02	Yamaguchi; Hirohisa	
	15	5402170		1995-28-03	Parulski et al.	
	16	7432952		2008-07-10	Fukuoka; Hiroki	
	17	5138459		1992-11-08	Roberts et al.	
	18	5870138		1999-09-02	Smith et al.,	
	19	7317815		2008-08-01	Steinberg et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~18733634~~	18/675,220
	Filing Date	~~2018-03-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit	~~2457~~ Meky	
	Examiner Name		
	Attorney Docket Number	BINDER~~.101 (2018-04-26).~~014-US2	

	20	5987154		1999-16-11	Gibbon et al.	
	21	6128397		2000-03-10	Baluja et al.	
	22	6188777		2001-13-02	Darrell et al.	
	23	6282317		2001-28-08	Luo et al.	
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	25	6332033		2001-18-12	Qian; Richard	
	26	6404900		2002-11-06	Qian et al.	
	27	6407777		2002-18-06	DeLuca; Michael Joseph	
	28	7508961		2009-24-03	Chen et al.	
	29	7315630		2008-01-01	Steinberg et al.	
	30	7110575		2006-19-09	Chen et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~17733634~~ 18/675,220
	Filing Date	~~2019-03-01~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER~~-40A (2013-04-26)~~-014-US2

	31	6526161		2003-25-02	Yan; Yong	
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	41	4367027		1983-04-01	Stauffer; Norman L.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~18/768,067~~ 18/675,220
	Filing Date	~~2024-07-01~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	~~2457~~ Meky
	Examiner Name	
	Attorney Docket Number	BINDER~~-40A (2018-04-26)-C~~014-US2

	42	4638364		1987-20-01	Hiramatsu; Tatsuo	
	43	5291234		1994-01-03	Shindo , et al.	
	44	5386103		1995-31-01	DeBan , et al.	
	45	5486429		1996-30-01	Kojima , et al.	
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	48	5710833		1998-20-01	Moghaddam , et al.	
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U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code1	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050044119		2005-24-02	Langin-Hooper et al.	
	2	20080263117		2008-23-10	Rose et al.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~18/768,864~~ 18/675,220
	Filing Date	~~2015-03-01~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	~~2457~~ Meky
	Examiner Name	
	Attorney Docket Number	BINDER-~~40A (2018-04-26)-3~~014-US2

FOREIGN PATENT DOCUMENTS								
Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐
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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	ITU-T G.9960 entitled: "Unified high-speed wireline-based home networking transceivers – System architecture and physical layer specification", 12/2011 (160 pages)	☐
	2	ITU-T G.989.1 entitled: "Phoneline networking transceivers - Foundation", 02/2001 (19 pages)	☐
	3	RFC 5389 entitled: "Session Traversal Utilities for NAT (STUN)", October 2008 51 pages)	☐
	4	RFC 4098 entitled: "Terminology for Benchmarking BGP Device Convergence in the Control Plane", June 2005 (37 pages)	☐
	5	RFC 3550 entitled: "RTP: A Transport Protocol for Real-Time Applications", July 2003 (89 pages)	☐
	6	RFC 3315 entitled: "Dynamic Host Configuration Protocol for IPv6 (DHCPv6)", July 2003 (102 pages)	☐
	7	RFC 3261 entitled: "SIP: Session Initiation Protocol", June 2002 (269 pages)	☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
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	Filing Date	~~2015-09-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit	~~2457~~	Meky
	Examiner Name		
	Attorney Docket Number	BINDER~~-40A (2013-04-30) C~~014-US2	

	8	RFC 2460 entitled: "Internet Protocol, Version 6 (IPv6) Specification", December 1998 (40 pages)	☐
	9	RFC 2131 entitled: "Dynamic Host Configuration Protocol", March 1997 (46 pages)	☐
	10	RFC 1349 entitled: "Type of Service in the Internet Protocol Suite", July 1992 (29 pages)	☐
	11	RFC 1034 entitled: "DOMAIN NAMES - CONCEPTS AND FACILITIES", November 1987 (56 pages)	☐
	12	RFC 1035 entitled: "DOMAIN NAMES - IMPLEMENTATION AND SPECIFICATION", November 1987 (56 pages)	☐
	13	RFC 791 entitled: "Internet Protocol", September 1981 (52 pages)	☐
	14	ECMA-352 entitled: "Near Field Communication -- Interface and Protocol -2 (NFCIP-2)", by ECMA International, 2nd Edition/June 2010 (12 pages)	☐
	15	ECMA-340 entitled: "Near Field Communication -- Interface and Protocol (NFCIP-1)", by ECMA International, 2nd Edition/December 2004 (65 pages)	☐
	16	IEEE Std 802.15.4™-2011, "IEEE Standard for Local and metropolitan area networks - Part 15.4: Low-Rate Wireless Personal Area Networks (LR-WPANs)", Approved 16 June 2011 (334 pages)	☐
	17	IEEE Std 802.15.3c™-2009, "IEEE Standard for Information technology - Part 15.3: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for High Rate Wireless Personal Area Networks (WPANs)", Published by IEEE on 12 October 2009 (203 pages)	☐
	18	"Universal Serial Bus 3.0 Specification", Revision 1.0, June 6, 2011, downloaded from www.usb.org (531 pages)	☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~[illegible]~~ 18/675,220
	Filing Date	~~2013-03-01~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	~~2457~~ Meky
	Examiner Name	
	Attorney Docket Number	BINDER ~~404 (2013-04-26)~~ 014-US2

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	20	SUCKOW E.H., "Basics of High-Performance SerDes Design: Part I", Fairchild Semiconductor International, downloaded 10/2011 (8 pages).	☐
	21	"Hard-Disk Basics" compiled from PCGUIDE.COM by Mehedi Hasan, February 12, 2005 (738 pages)	☐

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EXAMINER SIGNATURE

Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US2

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	/Yehuda Binder/	Date (YYYY-MM-DD)	~~2018-11-27~~ 2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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

Application Number	~~19755301~~ 18/675,220
Filing Date	~~2013-03-01~~ 05-28-2024
First Named Inventor	BINDER Yehuda
Art Unit	~~2457~~ Meky
Examiner Name	
Attorney Docket Number	BINDER-~~101 (2013-04-29) 1~~-014-US2

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~18708631~~ 18/675,220
	Filing Date	~~2015-03-31~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-~~40A (2013-04-26) 1~~014-US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~[illegible]~~	18/675,220
	Filing Date	~~2024-05-28~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit		~~2457~~ Meky
	Examiner Name		
	Attorney Docket Number	BINDER~~.40A (2018.04.26).1~~014-US2	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~18708681~~ 18/675,220
	Filing Date	~~2015-03-01~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	~~2457~~ Meky
	Examiner Name	
	Attorney Docket Number	BINDER~~-40A (2018-04-26)-1~~-014-US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~18/708,681~~ 18/675,220
	Filing Date	~~2015-03-31~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	~~2457~~ Meky
	Examiner Name	
	Attorney Docket Number	BINDER~~-10A (2013-04-26)-1~~014-US2

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If you wish to add additional U.S. Patent citation information please click the Add button.						
U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code1	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~18/788,681~~ 18/675,220
	Filing Date	~~2024-07-31~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	2457
	Examiner Name	Meky
	Attorney Docket Number	BINDER~~.40A (2018-04-26).1~~ 014-US2

FOREIGN PATENT DOCUMENTS								
Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐
If you wish to add additional Foreign Patent Document citation information please click the Add button								

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	Publication number 1-587005-001-3 by Cisco Systems, Inc. (6/99) entitled: "Internetworking Technologies Handbook", Chapter 5: "Routing Basics", pages 5-1 to 5-10 (10 pages)	☐
	2	Publication number 1-587005-001-3 by Cisco Systems, Inc. (6/99) entitled: "Internetworking Technologies Handbook", Chapter 30: "Open System Interconnection Protocols" pages 30-1 to 30-10 (10 pages)	☐
	3	Publication number 1-587005-001-3 by Cisco Systems, Inc. (6/99) entitled: "Internetworking Technologies Handbook", Chapter 32: "IPv6" pages 32-1 to 32-6 (6 pages)	☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	[redacted] 18/675,220
	Filing Date	[redacted] 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	2457
	Examiner Name	Meky
	Attorney Docket Number	BINDER-[redacted]014-US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~17733674~~	18/675,220
	Filing Date	~~2015-03-31~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit	~~2457~~ Meky	
	Examiner Name		
	Attorney Docket Number	BINDER~~-101 (2018-04-26)-1~~014-US2	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~[redacted]~~	18/675,220
	Filing Date	~~2018-03-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit	~~2457~~	Meky
	Examiner Name		
	Attorney Docket Number	BINDER~~.40A (2018-04-26).1~~014-US2	

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	39	Ben-Gurion University Publication entitled: "Chapter 9 – Feedforward Control" (pages 221-240) downloaded from http://www.bgu.ac.il/chem_eng/pages/Courses/oren%20courses/Chapter_9.pdf (20 pages)	☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~[illegible]~~ 18/675,220
	Filing Date	~~2013-03-01~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	~~2457~~ Meky
	Examiner Name	
	Attorney Docket Number	BINDER~~-10A (2013-04-26)-1~~-014-US2

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	42	The Publication entitled: "Introduction to Fuzzy Control" by Marcelo Godoy Simoes (5 pages)	☐
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	44	SAE J1939-01 Surface Vehicle Standard entitled: "Recommended Practice for Control and Communication Network for On-Highway Equipment", Issued: 2000-09 (7 pages)	☐
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	48	The Brown University publication CS-99-11 entitled: "A survey of hand Posture and Gesture Recognition Techniques and Technology", by Joseph J. LaViola Jr., June 1999 (80 pages)	☐
	49	Cisco Validated Design document entitled: "Building Automation System over IP (BAS/IP) Design and Implementation Guide" by Cisco Systems and Johnson Controls, 15 August 2008, v8.1 (107 pages)	☐
	50	The article entitled:" Smart Homes for Older People: Positive Aging in a Digital World", by Quynh Lê, Hoang Boi Nguyen and Tony Barnett, published in Future Internet 2012, 4, 607-617; doi:10.3390/fi4020607 (11 pages)	☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~[illegible]~~	18/675,220
	Filing Date	~~2018-03-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit	~~2457~~ Meky	
	Examiner Name		
	Attorney Docket Number	BINDER~~-104 (2018-04-26)-1~~014-US2	

EXAMINER SIGNATURE			
Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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☐ 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.

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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.

Signature	/Yehuda Binder/	Date (YYYY-MM-DD)	~~2016-11-07~~ 2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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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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.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/675,220
	Filing Date	05-28-2024
	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5555498	A	1996-09-10	CHARLES J. BERRA	
	2	6957133	B1	2005-10-18	Robert Hunt	
	3	7904219	B1	2011-03-08	Larkin H. Lowrey	
	4	7103460	B1	2006-09-05	David S. Breed	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20140215491	A1	2014-07-31	Sateesh K. Addepalli	
	2	20100071053	A1	2010-03-18	Amir Ansari	

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	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	3	20070021847	A1	2007-01-25	Akihiko Hyodo	
	4	20110153149	A1	2011-06-23	Hong Seok Jeon	
	5	20090138136	A1	2009-05-28	Akihiro Natsume	
	6	20060111825	A1	2006-05-25	Minoru Okada	
	7	20080100428	A1	2008-05-01	Sherry D. Price	
	8	20070198144	A1	2007-08-23	William Robert Norris	
	9	20030009271	A1	2003-01-09	Susumu Akiyama	
	10	20100211258	A1	2010-08-19	Kohei SAKURAI	
	11	20100030421	A1	2010-02-04	Kentaro YOSHIMURA	
	12	20150046582	A1	2015-02-12	David C. Gelvin	
	13	20070069947	A1	2007-03-29	Matthew Banet	

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	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	14	20100023198	A1	2010-01-28	Brennan Todd Hamilton	
	15	20030093199	A1	2003-05-15	Michael Mavreas	
	16	20030130774	A1	2003-07-10	Pradeep R. Tripathi	
	17	20080122288	A1	2008-05-29	James Plante	
	18	20050146458	A1	2005-07-07	Steve Douglas Carmichael	
	19	20060025897	A1	2006-02-02	Oleksandr T. Shostak	
	20	20100305807	A1	2010-12-02	Otman A. Basir	
	21	20070038461	A1	2007-02-15	Lisa Abbott	
	22	20080215336	A1	2008-09-04	Christopher L. Oesterling	
	23	20120212341	A1	2012-08-23	Bernd Siber	
	24	20110118934	A1	2011-05-19	Larkin H. Lowrey	

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	Filing Date	05-28-2024
	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	25	20020103576	A1	2002-08-01	Seiichi Takamura		

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	1	2011051022	WO	A1	2011-05-05	SIBER BERND		☐

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	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

CERTIFICATION STATEMENT

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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.

Signature	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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(Not for submission under 37 CFR 1.99)

Application Number	18675220
Filing Date	2024-05-28
First Named Inventor	Yehuda BINDER
Art Unit	2457
Examiner Name	Meky
Attorney Docket Number	BINDER-014-US28

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9047857		2015-06-02	Barton; William F.	
	2	9401140		2016-07-26	Weber; Frederick V. et al.	
	3	9424840		2016-08-23	Hart; Gregory Michael et al.	
	4	9786294		2017-10-10	Bezos; Jeffrey P. et al.	
	5	8855295		2014-10-07	Chhetri; Amit S. et al.	
	6	9689960		2017-06-27	Barton; William Folwell et al.	
	7	9947333		2018-04-17	David; Tony	
	8	9698999		2017-07-04	Mutagi; Rohan	

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	Art Unit	2457
	Examiner Name	Meky
	Attorney Docket Number	BINDER-014-US28

	9	9754591		2017-09-05	Kumar; Nishant et al.	
	10	10026401		2018-07-17	Mutagi; Rohan et al.	
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	Art Unit	2457
	Examiner Name	Meky
	Attorney Docket Number	BINDER-014-US28

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EXAMINER SIGNATURE

Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

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☒ 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	/Yehuda Binder/	Date (YYYY-MM-DD)	2025-02-12
Name/Print	Yehuda BINDER	Registration Number	73612

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

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.

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1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

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

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

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

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

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

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

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

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

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PTO/SB/08a (02-18)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	18/675,220
Filing Date	05-28-2024
First Named Inventor	Yehuda Binder
Art Unit	2457 Meky
Examiner Name	
Attorney Docket Number	BINDER-014-US28

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7019646	B1	2006-03-28	Noel Woodard	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20130121239	A1	2013-05-16	John Alson Hicks	
	2	20130048319	A1	2013-02-28	William E. Glaub	
	3	20120236748	A1	2012-09-20	Edwin B. Brownrigg	
	4	20120229283	A1	2012-09-13	Cameron MCKENNA	
	5	20110082599	A1	2011-04-07	Makarand Shinde	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/675,220
	Filing Date	05-28-2024
	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	6	20090051551	A1	2009-02-26	Hai D. Pham	
	7	20090042533	A1	2009-02-12	Karen D. Lontka	
	8	20080221715	A1	2008-09-11	Paul Krzyzanowski	
	9	20070262847	A1	2007-11-15	Cory L. Grabinger	
	10	20070169080	A1	2007-07-19	Larry Alan Friedman	
	11	20060265195	A1	2006-11-23	Jon A. Woodard	
	12	20050226201	A1	2005-10-13	Brian K. McMillin	
	13	20050154494	A1	2005-07-14	Osman Ahmed	
	14	20040217857	A1	2004-11-04	Gary Lennartz	
	15	20010024163	A1	2001-09-27	Thomas D. Petite	
	16	20120112970	A1	2012-05-10	Ruben Caballero	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18/675,220
	Filing Date	05-28-2024
	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	17	20120303150	A1	2012-11-29	Meenakshi Sundaram Krishnaswamy	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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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	TP-LINK User Guide TL-POE10R, PoE Splitter, Rev. 3.0.0 Document Number – 7106503409, (Published 2010) (10 pages)	☐

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EXAMINER SIGNATURE

Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

*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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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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

Application Number	~~13753531~~ 18/675,220
Filing Date	~~2013-03-31~~ 05-28-2024
First Named Inventor	BINDER Yehuda
Art Unit	~~2457~~ Meky
Examiner Name	
Attorney Docket Number	BINDER~~-103 (2013-04-30)~~-014-US2

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5930201		1999-27-07	Cray; Benjamin A.	
	2	4351192		1982-28-09	Toda et al.	
	3	7239577		2007-03-07	Tenghamn et al.	
	4	7614305		2009-10-11	Yoshioka et al.	
	5	5511547		1996-30-04	Markle , et al.	
	6	6747258		2004-08-06	Benz et al.	
	7	5105087		1992-14-04	Jagielinski; Tomasz M.	
	8	4243631		1981-06-01	Ryerson; John D.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~[illegible]~~	18/675,220
	Filing Date	~~2013-03-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit	~~2457~~ Meky	
	Examiner Name		
	Attorney Docket Number	BINDER-~~401 (2018-04-26) P~~014-US2	

	9	7256466		2007-14-08	Lieber et al.	
	10	7898147		2011-01-03	Grabinger et al.	
	11	3184842		1965-25-05	Maropis	
	12	4019073		1977-19-04	Vishnevsky et al.	
	13	4210837		1980-01-07	Vasiliev et al.	
	14	3433981		1969-18-03	Bollee	
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	16	5965968		1999-12-10	Robert et al.	
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	18	4496149		1985-29-01	Schwartzberg; Robert B.	
	19	4516260		1985-07-05	Breedlove et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~18223624~~	18/675,220
	Filing Date	~~2013-03-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit	~~3457~~ Meky	
	Examiner Name		
	Attorney Docket Number	BINDER-~~401 (2018-04-26) P~~014-US2	

	20	7414186		2008-19-08	Scarpa et al.	
	21	4968255		1990-06-11	Lee et al.	
	22	4248123		1981-03-02	Bunger et al.	
	23	4796891		1989-10-01	Milner; Ronald E.	
	24	6527611		2003-04-03	Cummings; Charles A.	
	25	4840602		1989-20-06	Rose; William J.	
	26	6132281		2000-17-10	Klitsner et al.	
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	28	7692320		2010-06-04	Lemieux; Aaron Patrick	
	29	5578877		1996-26-11	Tiemann; Jerome J.	
	30	7847421		2010-07-12	Gardner et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	[redacted]	18/675,220
	Filing Date	2013-03-01	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit		2457
	Examiner Name		Meky
	Attorney Docket Number	BINDER-40A (2013-04-26) 014-US2	

	31	7688036		2010-30-03	Yarger et al.	
	32	6473609		2002-29-10	Schwartz , et al.	
	33	7653573		2010-26-01	Hayes, Jr. et al.	
	34	6694316		2004-17-02	Langseth. et al.	
	35	7334001		2008-19-02	Eichstaedt et al.	
	36	7136482		2006-14-11	Wille; Daniel J.	
	37	7557689		2009-07-07	Seddigh et al.	
If you wish to add additional U.S. Patent citation information please click the Add button.						
U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code1	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20110061460		2011-17-03	SEEGER; JOSEPH ; et al.	
	2	20110219873		2011-15-09	OHTA; Kazunori ; et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~18700067~~	18/675,220
	Filing Date	~~2019-03-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit	~~2457~~ Meky	
	Examiner Name		
	Attorney Docket Number	BINDER~~-40A (2018-04-26)-2~~ 014-US2	

	3	20110265572		2011-03-11	Hoenes; Frank	
	4	20080257050		2008-23-10	Watanabe; Kazuaki	
	5	20100242611		2010-30-09	Terazawa; Hidehito	
	6	20070264623		2007-15-11	Wang; Wayne ; et al.	
	7	20110045523		2011-24-02	Strano; Michael S. ; et al.	
	8	20110275544		2011-10-11	Zhou; Chongwu ; et al.	
	9	20070256337		2007-08-11	Segan; Marc Howard	
	10	20070210580		2007-13-09	Roberts; Stephen ; et al.	
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	12	20070214096		2007-13-09	Adams; Kenneth L. ; et al.	
	13	20080258913		2008-23-10	Busey; Andrew	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~18723634~~	18/675,220
	Filing Date	~~2018-03-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit		~~2457~~ Meky
	Examiner Name		
	Attorney Docket Number	BINDER-~~401 (2018-04-26) P~~014-US2	

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FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number3	Country Code2 i	Kind Code4	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T5
	1							☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T5
	1	Publication "Security Guidance for Critical Areas of Focus in Cloud Computing V2.1", Prepared by the Cloud Security Alliance, December 2009 (76 pages)	☐
	2	Cisco Systems, Inc. Publication number 1-587005-001-3 (6/99), "Internetworking Technologies Handbook", Chapter 7: "Ethernet Technologies", pages 7-1 to 7-38 (38 pages)	☐
	3	The Standard Microsystems Corporation (SMSC) data-sheet "LAN91C111 10/100 Non-PCI Ethernet Single Chip MAC + PHY" Data-Sheet, Rev. 15 (02-20-04) (127 pages)	☐
	4	A data sheet 'Physical Random number generator RPG100.RPG100B' REV. 08 publication number HM-RAE106-0812, by FDK Corporation (13 pages)	☐
	5	Home Gateway Initiative (HGI) document entitled: "Home Gateway Technical Requirements: Residential Profile", Version 1.0, 29/04/2008 (125 pages)	☐
	6	Paper entitled: "Home Gateway" by Satish Gupta, Wipro Technologies, 2002 (20 pages)	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~18222624~~ 18/675,220
	Filing Date	~~2018-03-01~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	2457
	Examiner Name	Meky
	Attorney Docket Number	BINDER~~-40A (2018-04-26) 2~~-014-US2

	7	The standard "HID Usage Tables", by the USB Implementers' Forum,Version 1.12 (10/28/2004) (168 pages)	☐
	8	Publication number 1-587005-001-3 by Cisco Systems, Inc. (6/99) entitled: "Internetworking Technologies Handbook", Chapter 20: "Wireless Technologies" pages 20-1 to 20-42 (42 pages)	☐
	9	The white paper entitled: "WiGig White Paper – Defining the Future of Multi-Gigabit Wireless Communications", published by WiGig Alliance, July 2010 (5 pages)	☐
	10	"WirelessHD Specifications Version 1.1 Overview", published by the WirelessHD consortium, May 2010 (95 pages)	☐
	11	The technical overview entitled: "Enabling Wireless uncompressed HDTV Connectivity with a Unique Video-Modem Approach" by Meir Feder, published by the AMIMON Ltd. (10 pages)	☐
	12	The article 'IEEE 802.22: An Introduction to the First Wireless Standard based on Cognitive Radios', by Carlos Cordeiro, Kiran Challapali, Dagnachew Birru, and Sai Shankar, published in the Journal of Communication, Vol. 1, No. 1, April 2006 (10 pages)	☐
	13	The presentation 'IEEE 802.22 Wireless Regional Area Networks – Enabling Rural Broadband Wireless Access Using Cognitive Radio Technology', by Apruva N. Mody and Gerald Chouinard, Doc. # IEEE 802.22 – 10/0073r03, June 2010 (16 pages)	☐
	14	The document entitled: 'Dynamic Spectrum Access In IEEE 802.22 – Based Cognitive Wireless Networks: A Game Theoretic Model for Competitive Spectrum Bidding and Pricing', by Dusit Niyato, Ekram Hossain and Zhu Han, p. 16-25, published IEEE Wireless Communication April 2009 (8 pages)	☐
	15	ECMA International white paper Ecma/TC32-TG19/2005/012 entitled: "Near Field Communication – White paper" (supersedes 2004/001) (12 pages)	☐
	16	Rohde&Schwarz White Paper 1MA182_4e entitled: "Near Field Communication (NFC) Technology and Measurements White Paper" (26 pages)	☐
	17	The Texas Instrument Application Report No. SLOA101A entitled:"Introduction to the Controller Area Network (CAN)", August 2002–Revised July 2008 (15 pages)	☐

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	First Named Inventor	BINDER Yehuda	
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	Examiner Name		
	Attorney Docket Number	BINDER~~-40A (2013-04-26)-~~014-US2	

	18	Jan Kremer Consulting Services (JKCS) white paper entitled: "NFC - Near Field Communication – White paper" (44 pages)	☐
	19	RFC 2544 entitled: "Benchmarking Methodology for Network Interconnect Devices", March 1999 (32 pages)	☐
	20	ITU-T Y.1564 entitled: "Ethernet Service Activation Test Methodology", 03/2011 (38 pages)	☐
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	22	"LIN Specification Package – Revision 2.2A" by the LIN Consortium, December 31, 2010 (194 pages)	☐
	23	The presentation entitled:"Introduction to On Board Diagnostics (II)" downloaded on 11/2012 from: http://groups.engin.umd.umich.edu/vi/w2_workshops/OBD_ganesan_w2.pdf (148 pages)	☐
	24	The Society of Automotive Engineers (SAE) J1962 standard, June 1992 (8 pages)	☐
	25	SAE J1850, Implementing the J1850 Protocol, D. John Oliver, Intel Corporation (15 pages)	☐
	26	SAE J1979, International Surface Vehicle Standard entitled: "E/E Diagnostic Test Modes - Equivalent to ISO/DIS 15031-5:April 30, 2002", Issued: 1991-12; Revised: 2002-04 (159 pages)	☐
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~[illegible]~~	18/675,220
	Filing Date	~~2013-03-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit	~~2457~~ Meky	
	Examiner Name		
	Attorney Docket Number	BINDER~~-40A (2013-04-30) C~~014-US2	

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	30	J1939-15 Surface Vehicle Recommended Practice entitled: "Reduced Physical Layer, 250K bits/s, Un-Shielded Twisted Pair (UTP)", Issued: 2003-11 (19 pages)	☐
	31	J1939-21 Surface Vehicle Recommended Practice entitled: "Data Link Layer", Issued: 1994-07; Revised: 2001-04 (47 pages)	☐
	32	J1939-31 Surface Vehicle Recommended Practice entitled: "Network Layer", Issued: 1994-12; Revised: 2004-04 (27 pages)	☐
	33	J1939-81 Surface Vehicle Recommended Practice entitled: "Network Management", Issued: 1997-07; Revised: 2003-05 (39 pages)	☐
	34	J1939-71 Surface Vehicle Recommended Practice entitled: "Vehicle Application Layer (through December 2004)", Issued: 1994-08; Revised: 2006-06 (686 pages)	☐
	35	J1939-73 Surface Vehicle Recommended Practice entitled: "Application Layer - Diagnostics", Issued: 1996-02; Revised: 2006-09 (158 pages)	☐
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	37	J1939-75 Surface Vehicle Recommended Practice entitled: "Application Layer – Generator Sets and Industrial", Issued: 2002-12 (37 pages)	☐
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	39	SAE J2411 Surface Vehicle Recommended Practice entitled: "Single Wire CAN Network for Vehicle Applications", Issued: 2000-02 (33 pages)	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~18708631~~ 18/675,220
	Filing Date	~~2019-09-01~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	2457
	Examiner Name	Meky
	Attorney Docket Number	BINDER~~-40A (2018-04-26)-~~014-US2

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	45	IEEE Std 802.11b-1999 (R2003), "Supplement to IEEE Standard for Information technology - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications: Higher-Speed Physical Layer Extension in the 2.4 GHz Band", Approved 16 September 1999, Reaffirmation 12 June 2003 (96 pages)	☐
	46	IEEE Std 802.11g™-2003, "IEEE Standard for Information technology - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications Amendment 4: Further Higher Data Rate Extension in the 2.4 GHz Band" Published by IEEE on 27 June 2003 (78 pages)	☐
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	49	ITU-T H.264 entitled: "Advanced video coding for generic audiovisual services", 01/2012 (680 pages)	☐
	50	ITU-T G.9961 entitled: "Unified high-speed wire-line based home networking transceivers – Data link layer specification", 06/2010 (220 pages)	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~18760067~~	18/675,220
	Filing Date	~~2018-03-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit	2457	Meky
	Examiner Name		
	Attorney Docket Number	BINDER~~-101 (2018-04-26)-2~~014-US2	

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Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

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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.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US2

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	/Yehuda Binder/	Date (YYYY-MM-DD)	~~2016-11-07~~ 2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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

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

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Bibliographic Data

Application No: 18/675,220

Foreign Priority claimed: ○ Yes ◉ No

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

Verified and Acknowledged: /MOUSTAFA M MEKY/ Examiner's Signature | Initials

Title: SYSTEM AND METHOD FOR SERVER BASED CONTROL

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
05/28/2024	348	2457	BINDER-014-US28
RULE			

APPLICANTS

May Patents Ltd., Hod Hasharon, ISRAEL

INVENTORS

Yehuda BINDER, Ramat Gan, ISRAEL

Benjamin MAYTAL, Mevasseret Zion, ISRAEL

CONTINUING DATA

This application is a CON of 17408549 08/23/2021 PAT 12010174

17408549 is a CON of 15657163 07/23/2017 PAT 11128710

15657163 is a CON of 13733634 01/03/2013ABN

13733634 has PRO of 61647034 05/15/2012

13733634 has PRO of 61637030 04/23/2012

13733634 has PRO of 61620129 04/04/2012

13733634 has PRO of 61584500 01/09/2012

FOREIGN APPLICATIONS

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06/18/2024

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FILING FEE RECEIVED

$1,528

PTO/SB/08a (08-08)
Approved for use through 06/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

Application Number	~~18759304~~ 18/675,220
Filing Date	~~2019-03-01~~ 05-28-2024
First Named Inventor	BINDER Yehuda
Art Unit	~~2457~~ Meky
Examiner Name	
Attorney Docket Number	BINDER-~~103 (2019-04-02)~~-014-US2

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)			
	Application Number	~~18708631~~	18/675,220
	Filing Date	~~2015-09-01~~	05-28-2024
	First Named Inventor	BINDER Yehuda	
	Art Unit		2457 Meky
	Examiner Name		
	Attorney Docket Number	BINDER~~-101 (2018-04-26)~~-014-US2	

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~15/730,034~~ 18/675,220
	Filing Date	~~2015-06-01~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	~~2457~~ Meky
	Examiner Name	
	Attorney Docket Number	BINDER ~~401 (2018-04-26)~~ 014-US2

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	[redacted] 18/675,220
	Filing Date	[redacted]01 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	2457
	Examiner Name	Meky
	Attorney Docket Number	BINDER[redacted]014-US2

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If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20110222726		2011-15-09	Ruan; Xiang	
	2	20100211918		2010-19-08	Liang et al.	
	3	20070132725		2007-14-06	Kitaura; Masahiro	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~[illegible]~~ 18/675,220
	Filing Date	~~2019-09-01~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	~~3457~~ Meky
	Examiner Name	
	Attorney Docket Number	BINDER~~-40A (2018-04-26)-~~014-US2

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	14	20050125083		2005-09-06	Kiko, Frederick J.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~[illegible]~~ 18/675,220
	Filing Date	~~2018-03-01~~ 05-28-2024
	First Named Inventor	BINDER Yehuda
	Art Unit	~~2457~~ Meky
	Examiner Name	
	Attorney Docket Number	BINDER-~~40A (2018-04-26) 4~~014-US2

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FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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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]
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EXAMINER SIGNATURE

Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

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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.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US2

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	/Yehuda Binder/	Date (YYYY-MM-DD)	~~2018-11-27~~ 2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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

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

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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.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	18/675,220
	Filing Date	05-28-2024
	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9821344		2017-11-21	Fabio Zsigmond	
	2	9908153		2018-03-06	Fabio Zsigmond	
	3	10213810		2019-02-26	Fabio Zsigmond	
	4	10232408		2019-03-19	Fabio Zsigmond	
	5	10239094		2019-03-26	Fabio Zsigmond	
	6	9165320		2015-10-20	Brandon W. Belvin	
	7	10026116		2018-07-17	Meir ZOHAR	
	8	6813221		2004-11-02	Craig Barr	

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	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	9	6546297		2003-04-08	MICHAEL T. GASTON	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20150362954	A1	2015-12-17	MEIR ZOHAR	
	2	20180137462	A1	2018-05-17	MEIR ZOHAR	
	3	20060220830	A1	2006-10-05	Raymond Walden Bennett	
	4	20090076827	A1	2009-03-19	Clemens Bulitta	
	5	20090271002	A1	2009-10-29	David Asofsky	
	6	20070283005	A1	2007-12-06	Robert P. Beliles	
	7	20150324706	A1	2015-11-12	Jeremy B. Warren	
	8	20010041982	A1	2001-11-15	Toshinobu Kawasaki	

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	First Named Inventor	Yehuda Binder
	Art Unit	2457 Meky
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	9	20150138333	A1	2015-05-21	Richard Wayne DeVaul	
	10	20080130520	A1	2008-06-05	Matthew P. Ebrom	
	11	20090046715	A1	2009-02-19	RICHARD A. MCCOY	
	12	20010025349	A1	2001-09-27	John N. Sharood	
	13	20110170377	A1	2011-07-14	Ferdinand Villegas Legaspi	
	14	20080031139	A1	2008-02-07	Keiro Muro	
	15	20130235197	A1	2013-09-12	MATTHEW P. EBROM	
	16	20110148651	A1	2011-06-23	Michael S. Hendrickson	
	17	20110298301	A1	2011-12-08	Simon Wong	
	18	20100298957	A1	2010-11-25	Jaime Sanchez Rocha	
	19	20100211359	A1	2010-08-19	Neelesh B. Mehta	

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	Art Unit	2457
	Examiner Name	Meky
	Attorney Docket Number	BINDER-014-US28

	20	20120034904	A1	2012-02-09	Michael J. LeBeau	
	21	20090055019	A1	2009-02-26	Walter Dan Stiehl	
	22	20050216121	A1	2005-09-29	Tsutomu Sawada	
	23	20020198626	A1	2002-12-26	Michita Imai	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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Examiner Signature	/MOUSTAFA M MEKY/	Date Considered	03/16/2025

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

[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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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/675,220	**02/12/2025 09:17:22 AM Z ET**	**BINDER-014-US28**

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4512	FILED BY	Dorit Binder
PATENT CENTER #	69149118	FILING DATE	05/28/2024
CUSTOMER #	131926	FIRST NAMED INVENTOR	Yehuda BINDER
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Yehuda Binder

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
IDS21.pdf	5	Information Disclosure Statement (IDS) Form (SB08)	1234 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
IDS21.pdf	FBEFB8ED611A4795506DB4C645CD98B2944C96696EACDAC B107D113ADB4C9B72DBC9F5B33E2F7575424ED1276D729128 850299A3B1CD3B9C72E4F7E2C67B49E5

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

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	18675220
	Filing Date	2024-05-28
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9047857		2015-06-02	Barton; William F.	
	2	9401140		2016-07-26	Weber; Frederick V. et al.	
	3	9424840		2016-08-23	Hart; Gregory Michael et al.	
	4	9786294		2017-10-10	Bezos; Jeffrey P. et al.	
	5	8855295		2014-10-07	Chhetri; Amit S. et al.	
	6	9689960		2017-06-27	Barton; William Folwell et al.	
	7	9947333		2018-04-17	David; Tony	
	8	9698999		2017-07-04	Mutagi; Rohan	

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	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	9	9754591		2017-09-05	Kumar; Nishant et al.	
	10	10026401		2018-07-17	Mutagi; Rohan et al.	
	11	10031722		2018-07-24	Mutagi; Rohan et al.	

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	Attorney Docket Number	BINDER-014-US28

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☒ A certification statement is not submitted herewith.

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Signature	/Yehuda Binder/	Date (YYYY-MM-DD)	2025-02-12
Name/Print	Yehuda BINDER	Registration Number	73612

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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/675,220	**12/26/2024 02:54:48 PM Z ET**	**BINDER-014-US28**

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4512	FILED BY	Dorit Binder
PATENT CENTER #	68521277	FILING DATE	05/28/2024
CUSTOMER #	131926	FIRST NAMED INVENTOR	Yehuda BINDER
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Yehuda Binder

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
IDS20.pdf	5	Information Disclosure Statement (IDS) Form (SB08)	1234 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
IDS20.pdf	97049B34DB216BD8659B14AB2186FFAE1AEE4BEF4ADD63A6 EF19413085B96F93487343BDBCBBE94E29B7E8B11D3D11E96 55F80CEC7B9A7482F82268EC9F46A71

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

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

Application Number	18675220
Filing Date	2024-05-28
First Named Inventor	Yehuda BINDER
Art Unit	
Examiner Name	
Attorney Docket Number	BINDER-014-US28

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7693720		2010-04-06	Kennewick; Robert A. et al.	
	2	8015006		2011-09-06	Kennewick; Robert A. et al.	
	3	8195468		2012-06-05	Weider; Chris et al.	
	4	9263039		2016-02-16	Di Cristo; Philippe et al.	
	5	8073681		2011-12-06	Baldwin; Larry et al.	
	6	9626703		2017-04-18	Kennewick, Sr.; Michael R.	
	7	7818176		2010-10-19	Freeman; Tom et al.	
	8	8676224		2014-03-18	Louch; John O.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2024-05-28
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	9	7047196		2001-02-16	Theodore Calderone et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18675220
	Filing Date	2024-05-28
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

[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	18675220
	Filing Date	2024-05-28
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-12-26
Name/Print	Yehuda BINDER	Registration Number	73612

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

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.

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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/675,220	**12/26/2024 02:45:58 PM Z ET**	**BINDER-014-US28**

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4512	FILED BY	Dorit Binder
PATENT CENTER #	68521125	FILING DATE	05/28/2024
CUSTOMER #	131926	FIRST NAMED INVENTOR	Yehuda BINDER
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Yehuda Binder

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

Application Number	18675220
Filing Date	2024-05-28
First Named Inventor	Yehuda BINDER
Art Unit	
Examiner Name	
Attorney Docket Number	BINDER-014-US28

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7693720		2010-04-06	Kennewick; Robert A. et al.	
	2	8015006		2011-09-06	Kennewick; Robert A. et al.	
	3	8195468		2012-06-05	Weider; Chris et al.	
	4	9263039		2016-02-16	Di Cristo; Philippe et al.	
	5	8073681		2011-12-06	Baldwin; Larry et al.	
	6	9626703		2017-04-18	Kennewick, Sr.; Michael R.	
	7	7818176		2010-10-19	Freeman; Tom et al.	
	8	8676224		2014-03-18	Louch; John O.	

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	Art Unit	
	Examiner Name	
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	9	7047196				

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18675220
	Filing Date	2024-05-28
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18675220
	Filing Date	2024-05-28
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

CERTIFICATION STATEMENT

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OR

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-12-26
Name/Print	Yehuda BINDER	Registration Number	73612

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

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

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

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

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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)).

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

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/675,220	05/28/2024	Yehuda BINDER	BINDER-014-US28

CONFIRMATION NO. 4512

131926
May Patents Ltd. c/o Dorit Shem-Tov
P.O.B 7230
Ramat-Gan, 5217102
ISRAEL

PUBLICATION NOTICE

OC000000078520328

Date Mailed: 09/27/2024

Title:SYSTEM AND METHOD FOR SERVER BASED CONTROL

Publication No.US-2024-0323258-A1
Publication Date:09/26/2024

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 viewed using the USPTO's publicly available Searchable Databases via the Patent Public Search tool at www.uspto.gov. The direct link to access the Patent Public Search tool is currently https://ppubs.uspto.gov/pubwebapp/static/pages/ppubsbasic.html.

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.

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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/675,220	**09/24/2024 02:07:02 PM Z ET**	**BINDER-014-US28**

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4512	FILED BY	Dorit Binder
PATENT CENTER #	67300482	FILING DATE	05/28/2024
CUSTOMER #	131926	FIRST NAMED INVENTOR	Yehuda BINDER
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Yehuda Binder

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
IDS19-40Y-40Z.pdf	6	Information Disclosure Statement (IDS) Form (SB08)	1235 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
IDS19-40Y-40Z.pdf	6F456D0F2678CAFCAB5367C7F80259854826D0B9FC80DF922712EDE191DF7D5D0DF2502B55C8D8B7ABEAF2026569779C02A0DDEE7C44BB55B77B5EDA14C55337

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

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

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PTO/SB/08a (01-22)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	18675220
Filing Date	2024-05-28
First Named Inventor	Yehuda BINDER
Art Unit	
Examiner Name	
Attorney Docket Number	BINDER-014-US28

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9396450	B2	2016-07-19	Gazdzinski; Mark J. et al.	
	2	8301158	B1	2012-10-30	Thomas; C. Douglass	
	3	9100728	B2	2015-08-04	Higgins; Timothy Alan et al.	
	4	8886482	B2	2014-11-11	Higgins; Timothy Alan et al.	
	5	8949075	B2	2015-02-03	Higgins; Timothy Alan et al.	
	6	9031583	B2	2015-05-12	Pereira; Mindy et al.	
	7	9369839	B2	2016-06-14	Manges; Barbara J.	
	8	7917285	B2	2011-03-29	Rothschild; Leigh M.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2024-05-28
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	9	7683776	B2	2010-03-23	Glenn; Gregory M. et al.	
	10	6542819	B1	2003-04-01	Kovacs; Erno et al.	
	11	9712359	B2	2017-07-18	Snyder; Seth et al.	
	12	7952485	B2	2011-05-31	Schechter; Harry J. et al.	
	13	8248252	B2	2012-08-21	Schechter; Harry J. et al.	
	14	8547226	B2	2013-10-01	Schechter; Harry J. et al.	
	15	9857234	B2	2018-01-02	Schechter; Harry J. et al.	
	16	9541454	B2	2017-01-10	Schechter; Harry J. et al.	

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	1	20110304475	A1	2011-12-15	HIGGINS; Timothy Allan et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18675220
	Filing Date	2024-05-28
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	2	20110307203	A1	2011-12-15	HIGGINS; Timothy Allan et al.	
	3	20110307221	A1	2011-12-15	HIGGINS; Timothy Allan et al.	
	4	20100004857	A1	2010-01-07	Pereira; Mindy et al.	
	5	20160037295	A1	2016-02-04	Pereira; Mindy et al.	
	6	20050004752	A1	2005-01-06	Choi, Sang-on et al.	
	7	20150365792	A1	2015-12-17	Manges; Barbara J.	
	8	20160359651	A1	2016-12-08	Snyder; Seth et al.	
	9	20100127880	A1	2010-05-27	Schechter; Harry J. et al.	
	10	20120286969	A1	2012-11-15	Schechter; Harry J. et al.	
	11	20140223230	A1	2014-08-07	Schechter; Harry J. et al.	
	12	20180066996	A1	2018-03-08	Schechter; Harry J. et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18675220
	Filing Date	2024-05-28
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	13	20170082498	A1	2017-03-23	Schechter; Harry J. et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18675220
	Filing Date	2024-05-28
	First Named Inventor	Yehuda BINDER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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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	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-09-24
Name/Print	Yehuda BINDER	Registration Number	73612

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

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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
18/675,220	05/28/2024		1528	BINDER-014-US28	29	1

CONFIRMATION NO. 4512

131926
May Patents Ltd. c/o Dorit Shem-Tov
P.O.B 7230
Ramat-Gan, 5217102
ISRAEL

FILING RECEIPT



Date Mailed: 06/20/2024

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.

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Inventor(s)

Yehuda BINDER, Ramat Gan, ISRAEL;
Benjamin MAYTAL, Mevasseret Zion, ISRAEL;

Applicant(s)

May Patents Ltd., Hod Hasharon, ISRAEL;

Power of Attorney: The patent practitioners associated with Customer Number 131926

Domestic Priority data as claimed by applicant

This application is a CON of 17/408,549 08/23/2021 PAT 12,010,174
which is a CON of 15/657,163 07/23/2017 PAT 11,128,710
which is a CON of 13/733,634 01/03/2013 ABN
which claims benefit of 61/584,500 01/09/2012
and claims benefit of 61/620,129 04/04/2012
and claims benefit of 61/637,030 04/23/2012
and claims benefit of 61/647,034 05/15/2012

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

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If Required, Foreign Filing License Granted: 06/18/2024
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 18/675,220**
Projected Publication Date: 09/26/2024
Non-Publication Request: No
Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Preliminary Class

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

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 18/675,220

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	64		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	280		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	320		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	29 minus 20 =	* 9	x 40 =	360	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*	x =	0			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			504			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	1528		TOTAL	

APPLICATION AS AMENDED - PART II

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

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

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

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Kathi Vidal
Under Secretary of Commerce for Intellectual Property and
Director of the United States Patent and Trademark Office

Derrick Brent
Deputy Under Secretary of Commerce for Intellectual Property and
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PTO/SB/08a (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6777856	B2	2004-08-17	Stefan Brechbühl et al	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20060230841	A1	2006-10-19	Vaidya Shrikrishna	
	2	20100187832	A1	2010-07-29	Scott T. Holland et al	
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	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

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	Filing Date	~~2013-03-31~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-~~10A (2013-01-29) 2~~014-US2

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
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	Filing Date	2013-03-01
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~.101 (2013-04-29) D~~014-US2

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	Application Number	[redacted]
	Filing Date	2013-03-01
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
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	Filing Date	~~2013-02-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~-19A (2013-04-29) 2~~ 014-US2

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	Application Number	~~13723634~~
	Filing Date	~~2012-03-01~~
	First Named Inventor	BINDER Yehuda
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	1	Publication "Security Guidance for Critical Areas of Focus in Cloud Computing V2.1", Prepared by the Cloud Security Alliance, December 2009 (76 pages)	☐
	2	Cisco Systems, Inc. Publication number 1-587005-001-3 (6/99), "Internetworking Technologies Handbook", Chapter 7: "Ethernet Technologies", pages 7-1 to 7-38 (38 pages)	☐
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	Application Number	~~13723024~~
	Filing Date	~~2012-03-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER=~~104 (2012-04-26) 2~~014-US2

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	Filing Date	[redacted]
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	Filing Date	2013-03-01
	First Named Inventor	BINDER Yehuda
	Art Unit	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~13763964~~
	Filing Date	~~2013-02-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~.49A (2013-04-29).~~2014-US2

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	Application Number	~~13736964~~
	Filing Date	~~2013-03-01~~
	First Named Inventor	BINDER Yehuda
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	First Named Inventor	Yehuda Binder
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☐ 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	/Yehuda Binder/	Date (YYYY-MM-DD)	~~2016-11-07~~ 2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

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

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

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

PTO/SB/08a (02-18)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5555498	A	1996-09-10	CHARLES J. BERRA	
	2	6957133	B1	2005-10-18	Robert Hunt	
	3	7904219	B1	2011-03-08	Larkin H. Lowrey	
	4	7103460	B1	2006-09-05	David S. Breed	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20140215491	A1	2014-07-31	Sateesh K. Addepalli	
	2	20100071053	A1	2010-03-18	Amir Ansari	

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	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	3	20070021847	A1	2007-01-25	Akihiko Hyodo	
	4	20110153149	A1	2011-06-23	Hong Seok Jeon	
	5	20090138136	A1	2009-05-28	Akihiro Natsume	
	6	20060111825	A1	2006-05-25	Minoru Okada	
	7	20080100428	A1	2008-05-01	Sherry D. Price	
	8	20070198144	A1	2007-08-23	William Robert Norris	
	9	20030009271	A1	2003-01-09	Susumu Akiyama	
	10	20100211258	A1	2010-08-19	Kohei SAKURAI	
	11	20100030421	A1	2010-02-04	Kentaro YOSHIMURA	
	12	20150046582	A1	2015-02-12	David C. Gelvin	
	13	20070069947	A1	2007-03-29	Matthew Banet	

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	First Named Inventor	Yehuda Binder
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	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	14	20100023198	A1	2010-01-28	Brennan Todd Hamilton	
	15	20030093199	A1	2003-05-15	Michael Mavreas	
	16	20030130774	A1	2003-07-10	Pradeep R. Tripathi	
	17	20080122288	A1	2008-05-29	James Plante	
	18	20050146458	A1	2005-07-07	Steve Douglas Carmichael	
	19	20060025897	A1	2006-02-02	Oleksandr T. Shostak	
	20	20100305807	A1	2010-12-02	Otman A. Basir	
	21	20070038461	A1	2007-02-15	Lisa Abbott	
	22	20080215336	A1	2008-09-04	Christopher L. Oesterling	
	23	20120212341	A1	2012-08-23	Bernd Siber	
	24	20110118934	A1	2011-05-19	Larkin H. Lowrey	

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	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	25	20020103576	A1	2002-08-01	Seiichi Takamura		

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	1	2011051022	WO	A1	2011-05-05	SIBER BERND		☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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Signature	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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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)).

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/675,220	**05/28/2024 08:50:07 AM Z ET**	**BINDER-014-US28**

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4512	FILED BY	Dorit Binder
PATENT CENTER #	65686847	FILING DATE	-
CUSTOMER #	131926	FIRST NAMED INVENTOR	Yehuda BINDER
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Yehuda Binder

Documents

TOTAL DOCUMENTS: 25

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
aia0014-ADS.pdf	9	Application Data Sheet	2174 KB
Transmittal-letter.pdf	2	Transmittal of New Application	71 KB
Signed-declaration-BM.pdf	2	Oath or Declaration filed	161 KB
Abstract-ABST.docx	1	Abstract	86 KB
Signed-declaration-YB.pdf	1	Oath or Declaration filed	74 KB
40AB claims-CLM.docx	5	Claims	33 KB
Signed-40AB.pdf	2	Power of Attorney	1098 KB

Drawings.pdf	60	Drawings-only black and white line drawings	2128 KB
Spec-SPEC.docx	223	Specification	355 KB

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IDS3.pdf	6	Information Disclosure Statement (IDS) Form (SB08)	683 KB

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IDS8.pdf	5	Information Disclosure Statement (IDS) Form (SB08)	1011 KB
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IDS5.pdf	13	Information Disclosure Statement (IDS) Form (SB08)	1738 KB

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40AB-claims-for-filing.pdf	5	Auxiliary PDF of Application	23 KB
IDS9-IDS10.pdf	7	Information Disclosure Statement (IDS) Form (SB08)	1011 KB
IDS6-7.pdf	7	Information Disclosure	1012 KB

		Statement (IDS) Form (SB08)	
IDS4.pdf	13	Information Disclosure Statement (IDS) Form (SB08)	1708 KB
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IDS11.pdf	6	Information Disclosure Statement (IDS) Form (SB08)	1011 KB
IDS12-IDS13.pdf	5	Information Disclosure Statement (IDS) Form (SB08)	1011 KB
IDS14.pdf	6	Information Disclosure Statement (IDS) Form (SB08)	1011 KB
IDS15-14A.pdf	5	Information Disclosure Statement (IDS) Form (SB08)	1234 KB
IDS17-40P-40R.pdf	5	Information Disclosure Statement (IDS) Form (SB08)	1234 KB
IDS16.pdf	6	Information Disclosure Statement (IDS) Form (SB08)	1235 KB
IDS18-40Q-40V.pdf	4	Information Disclosure Statement (IDS) Form (SB08)	1234 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for 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.

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

New International Application Filed with the USPTO as a Receiving Office

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

Doc code :IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (08-08)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~12723634~~
	Filing Date	~~2013-03-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER ~~-101 (2010-01-29) S~~ 014-US2

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	[redacted]
	Filing Date	[redacted]
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER[redacted]014-US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~13763964~~
	Filing Date	~~2013-02-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~-19A (2013-04-29) C~~ 014-US2

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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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]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~15/733,954~~
	Filing Date	~~2018-03-31~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~-124 (2018-04-29)-5~~014-US2

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US2

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	/Yehuda Binder/	Date (YYYY-MM-DD)	~~2018-11-27~~ 2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/675,220	05/28/2024 08:50:07 AM Z ET	BINDER-014-US28

Title of Invention

SYSTEM AND METHOD FOR SERVER BASED CONTROL

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4512	FILED BY	Dorit Binder
PATENT CENTER #	65686847	AUTHORIZED BY	Yehuda Binder
CUSTOMER #	131926	FILING DATE	-
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Yehuda BINDER

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 506726	E20245R952408654	Dorit Binder

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
2111	UTILITY PATENT APPL. SEARCH FEE	280.00	1	280.00
4011	BASIC FILING FEE- UTILITY	64.00	1	64.00
2311	EXAMINATION OF ORIGINAL PATENT APPLICATION	320.00	1	320.00
2081	UTILITY APPL. SIZE FEE > THAN 100 PAGES (FEE X PAGES >= 101 IN 50 PAGE INCREMENTS)	168.00	3	504.00
2202	EACH CLAIM IN EXCESS OF 20	40.00	9	360.00
			TOTAL	$1,528.00

AMOUNT:

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.

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

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New International Application Filed with the USPTO as a Receiving Office

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Claims:

1. A client device for use with a Wireless Local Area Network (WLAN) in a building and with a controlled device that comprises a second actuator in the building, the client device comprising:

a WLAN transceiver for communicating over the WLAN;

a microphone for capturing first and second human voice data; and

a first actuator in the client device,

wherein the client device is configured to:

sending, over the Internet via the WLAN, the captured first and second human voice data to an Internet-connected server device external to the building;

receiving, from the server device over the Internet via the WLAN, first and second messages, in response to the sending of the captured first and second human voice data;

operating the first actuator in response to the received first message; and

sending, to the controlled device over the WLAN, a control message in response to the received second message, and

wherein the client device is addressable in the WLAN and in the Internet using an Internet Protocol (IP) address.

2. The client device according to claim 1, wherein the server device is configured for processing the first and second human voice data using a voice recognition algorithm for identifying a voice of a specific person.

3. The client device according to claim 1, further comprising a sensor that outputs sensor data that responds to a physical phenomenon, wherein the client device is further configured for sending to the server device, via the WLAN over the Internet, the sensor data, and wherein the first message is received in response to the sent sensor data.

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4. The client device according to claim 3, wherein the sensor is a thermoelectric sensor that responds to a temperature or to a temperature gradient of an object using conduction, convection, or radiation, or wherein the sensor is a photoelectric sensor that responds to a visible or an invisible light or gamma rays.

5. The client device according to claim 1, wherein each of the first and second actuators is configured for directly or indirectly affecting, changing, producing, or creating a physical phenomenon.

6. The client device according to claim 5, wherein the physical phenomenon comprises temperature, humidity, pressure, audio, vibration, light, motion, sound, proximity, flow rate, electrical voltage, or electrical current.

7. The client device according to claim 1, wherein the client device comprises multiple microphones, and wherein the capturing comprises capturing, by the multiple microphones in the client device, the first and second human voice data.

8. The client device according to claim 7, wherein the multiple microphones are arranged as a directional microphones array operative to estimate a number, magnitude, frequency, Direction-Of-Arrival (DOA), distance, or speed of a phenomenon impinging the microphones array.

9. The client device according to claim 1, wherein the microphone is an omnidirectional, unidirectional, or bidirectional microphone that is based on the sensing an incident sound-based motion of a diaphragm or a ribbon, or wherein the microphone comprises a condenser, an electret, a dynamic, a ribbon, a carbon, or a piezoelectric microphone.

10. The client device according to claim 1, further comprising a volatile or non-volatile memory for storing the IP address.

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11. The client device according to claim 1, wherein the client device is further addressed by a Media Access Control (MAC) layer address that is MAC-48, Extended Unique Identifier (EUI) EUI-48, or EUI-64 address type.

12. The client device according to claim 1, wherein the IP address is a static or dynamic Internet Protocol (IP) address that is IPv4 or IPv6 type address.

13. The client device according to claim 1, wherein the WLAN is according to, or base on, Institute of Electrical and Electronics Engineers (IEEE) 802.11-2012, IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, IEEE 802.11n, or IEEE 802.11ac.

14. The client device according to claim 1, wherein the WLAN uses an unlicensed radio frequency band that is an Industrial, Scientific and Medical (ISM) radio band.

15. The client device according to claim 1, further configured for communicating over a cellular telephone network that is a Third Generation (3G) network that uses Universal Mobile Telecommunications Client device (UMTS), Wideband Code Division Multiple Access (W-CDMA) UMTS, High Speed Packet Access (HSPA), UMTS Time-Division Duplexing (TDD), CDMA2000 1xRTT, Evolution – Data Optimized (EV-DO), or a Global Client device for Mobile communications (GSM), Enhanced Data rates for GSM Evolution (EDGE) EDGE-Evolution, or wherein the cellular telephone network is a Fourth Generation (4G) network that uses Evolved High Speed Packet Access (HSPA+), Mobile Worldwide Interoperability for Microwave Access (WiMAX), Long-Term Evolution (LTE), LTE-Advanced, Mobile Broadband Wireless Access (MBWA), or is based on IEEE 802.20-2008.

16. The client device according to claim 1, wherein the controlled device is integrated in, is part of, or is entirely included in, a household appliance having a primary function.

17. The client device according to claim 16, wherein the primary functionality of the appliance is associated with a food storage, handling, or preparation.

18. The client device according to claim 17, wherein the primary function of the appliance is heating food, and wherein the appliance is a microwave oven, an electric mixer, a stove, an oven, or an induction cooker.

19. The client device according to claim 17, wherein the appliance is a refrigerator, a freezer, a food processor, a dishwasher, a food blender, a beverage maker, a coffeemaker, or an iced-tea maker.

20. The client device according to claim 16, wherein the primary function of the appliance is associated with an environmental control, and the appliance is part of a Heating, Ventilation and Air Conditioning (HVAC) system.

21. The client device according to claim 20, wherein the primary function of the appliance is associated with a temperature control, and wherein the appliance is an air conditioner or a heater.

22. The client device according to claim 16, wherein the primary function of the appliance is associated with cleaning, wherein the appliance primary function is associated with a clothes cleaning and the appliance is a washing machine, or wherein the appliance is a vacuum cleaner.

23. The client device according to claim 16, wherein the appliance is an answering machine, a telephone set, a home cinema system, a High Fidelity (HiFi) system, a Compact Disc (CD) or Digital Video Disc (DVD) player, an electric furnace, a trash compactor, a smoke detector, a light fixture, or a dehumidifier.

24. The client device according to claim 1, wherein the first actuator is an electric light source for converting an electrical

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energy into light that emits a visible or non-visible light for illumination or indication, and the non-visible light is infrared, ultraviolet, X-rays, or gamma rays.

25. The client device according to claim 24, wherein the electric light source comprises a lamp, an incandescent lamp, a gas discharge lamp, a fluorescent lamp, a Solid-State Lighting (SSL), a Light Emitting Diode (LED), an Organic LED (OLED), a polymer LED (PLED), or a laser diode.

26. The client device according to claim 1, wherein the first actuator is a motion actuator that causes a linear or rotary motion.

27. The client device according to claim 1, wherein the first actuator is a sounder for converting an electrical energy to an omnidirectional, unidirectional, or bidirectional pattern emitted, audible or inaudible, sound waves.

28. The client device according to claim 27, wherein the sounder comprises an electromagnetic loudspeaker, a piezoelectric speaker, an electrostatic loudspeaker (ESL), a ribbon or planar magnetic loudspeaker, or a bending wave loudspeaker, or wherein the sounder comprises an electric bell, a buzzer, a chime, a whistle, or a ringer.

29. The client device according to claim 27, wherein the operating of the first actuator comprises playing a digital audio content that is pre-recorded or synthesized, or wherein the operating of the first actuator comprises simulating the voice of a human being or generating music, or wherein the operating of the first actuator comprises sounding a syllable, a word, a phrase, a sentence, a short story, or a long story, using male or female voice.

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PTO/SB/08a (08-08)
Approved for use through 08/31/2008. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
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Application Number	~~10793634~~
Filing Date	~~2013-03-01~~
First Named Inventor	BINDER Yehuda
Art Unit	
Examiner Name	
Attorney Docket Number	BINDER-~~19A (2013-01-29)~~-014-US2

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	[redacted]
	Filing Date	[redacted]01
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER[redacted]014-US2

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	Application Number	~~13/338534~~
	Filing Date	~~2012-02-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	[redacted]
	Filing Date	[redacted]
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER[redacted]014-US2

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If you wish to add additional U.S. Patent citation information please click the Add button.

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	[redacted]
	Filing Date	[redacted]
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER[redacted]014-US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~13723034~~
	Filing Date	~~2012-03-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER=~~104 (2012-04-26) 4~~014-US2

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FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04 [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US2

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	/Yehuda Binder/	Date (YYYY-MM-DD)	~~2018-11-27~~ 2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~10755034~~
	Filing Date	~~2015-03-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-~~101 (2015-04-23) 1~~-014-US2

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5010399		1991-23-04	Goodman et al.	
	2	5621455		1997-15-04	Rogers et al.	
	3	7466844		2008-16-12	Arun Ramaswamy et al.	
	4	7213061		2007-01-05	Hite et al.	
	5	6549234		2003-15-04	Lee; Sung-Min	
	6	6844897		2005-18-01	Andersson; Anders	
	7	7342212		2008-11-03	Mentzer et al.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~13763964~~
	Filing Date	~~2013-02-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~-10A (2013-04-29) 1~~-014-US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~13733614~~
	Filing Date	~~2013-01-04~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~.19A (2013-01-29) 1~~014-US2

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	30	6606911		2003-19-08	Akiyama et al.	

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	Application Number	~~13763964~~
	Filing Date	~~2013-02-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~.49A (2013-04-29) 1~~014-US2

	31	4434451		1984-28-02	Delatorre; Leroy C.	
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	33	5001453		1991-19-03	Ikejiri et al.	
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	37	4873481		1989-10-10	Nelson et al.,	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~13763964~~
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	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~-19A (2013-04-29) 1~~014-US2

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U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20070112939		2007-17-05	Wilson; Brian B. ; et al.	
	2	20100201531		2010-12-08	Pakravan; Alireza ; et al.	
	3	20050247573		2005-10-11	Nakamura, Hideaki ; et al.	
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	6	20100162815		2010-01-07	LEE; Sang-Hun	
	7	20090272193		2009-05-11	OKAGUCHI; Kenjiro ; et al.	
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	Application Number	~~13763964~~
	Filing Date	~~2013-02-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~-19A (2013-04-29) 1~~ 014-US2

FOREIGN PATENT DOCUMENTS								
Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐
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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	Publication number 1-587005-001-3 by Cisco Systems, Inc. (6/99) entitled: "Internetworking Technologies Handbook", Chapter 5: "Routing Basics", pages 5-1 to 5-10 (10 pages)	☐
	2	Publication number 1-587005-001-3 by Cisco Systems, Inc. (6/99) entitled: "Internetworking Technologies Handbook", Chapter 30: "Open System Interconnection Protocols" pages 30-1 to 30-10 (10 pages)	☐
	3	Publication number 1-587005-001-3 by Cisco Systems, Inc. (6/99) entitled: "Internetworking Technologies Handbook", Chapter 32: "IPv6" pages 32-1 to 32-6 (6 pages)	☐
	4	Publication number 1-587005-001-3 by Cisco Systems, Inc. (6/99) entitled: "Internetworking Technologies Handbook", Chapter 45: "Open System Interconnection Routing Protocol", pages 45-1 to 45-8 (8 pages)	☐
	5	Publication number 1-587005-001-3 by Cisco Systems, Inc. (6/99) entitled: "Internetworking Technologies Handbook", Chapter 51: "Security Technologies" pages 51-1 to 51-12 (12 pages)	☐
	6	IBM Corporation, International Technical Support Organization Redbook Documents No. SG24-4756-00 entitled: "Local Area Network Concepts and Products: LAN Operation Systems and management", 1st Edition May 1996 (216 pages)	☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	[redacted]
	Filing Date	[redacted]
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER=[redacted]014-US2

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	10	A slide-show by W. Steven Conner, Intel Corp. et al. entitled: "IEEE 802.11s Tutorial" presented at the IEEE 802 Plenary, Dallas on Nov. 13, 2006 (93 pages)	☐
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	12	An IEEE Communication magazine paper by Joseph D. Camp and Edward W. Knightly of Electrical and Computer Engineering, Rice University, Houston, TX, USA, entitled: "The IEEE 802.11s Extended Service Set Mesh Networking Standard" (6 pages)	☐
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	14	"Home Network with Cloud Computing for Home Management", by Katsuya Suzuki and Masahiro Inoue, IEEE 15th International Symposium on Consumer Electronics, 2011, pages 421-425 (5 pages)	☐
	15	Publication by Cisco Systems, Inc. (6/99) entitled: "Internetworking Technologies Overview", Chapter 18: "Multiservice Access Technologies", pages 18-1 to 18-10 (18 pages)	☐
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	18	Home Gateway Initiative (HGI) document entitled: "HGI guideline Paper - Remote Access", Version 1.01, 18/05/08 (19 pages)	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	[redacted]
	Filing Date	[redacted]
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER[redacted]014-US2

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	20	The book entitled: "Practical Design Techniques for Sensor Signal Conditioning", by Analog Devices, Inc., 1999 (ISBN-0-916550-20-6) (366 pages)	☐
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	22	Data-sheet LIS302DL STMicroelectronics, 'MEMS motion sensor 3-axis - ±2g/±8g smart digital output "piccolo" accelerometer', Rev. 4, October 2008 (42 pages)	☐
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	24	The book entitled: "Sensors and Control Systems in manufacturing", Second Edition 2010, by Sabrie Soloman, The McGraw-Hill Companies, ISBN: 978-0-07-160573-1 (625 pages)	☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~15/363,954~~
	Filing Date	~~2016-03-04~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~-19A (2013-04-29) 1~~-014-US2

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	39	Ben-Gurion University Publication entitled: "Chapter 9 – Feedforward Control" (pages 221-240) downloaded from http://www.bgu.ac.il/chem_eng/pages/Courses/oren%20courses/Chapter_9.pdf (20 pages)	☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	[redacted]
	Filing Date	[redacted]
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER[redacted]014-US2

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	42	The Publication entitled: "Introduction to Fuzzy Control" by Marcelo Godoy Simoes (5 pages)	☐
	43	The publication entitled: "Fuzzy Logic in Embedded Microcomputers and Control Systems" by Walter Banks and Gordon Hayward, published by the Byte Craft Limited, October 2002 (75 pages)	☐
	44	SAE J1939-01 Surface Vehicle Standard entitled: "Recommended Practice for Control and Communication Network for On-Highway Equipment", Issued: 2000-09 (7 pages)	☐
	45	SAE J1939 Surface Vehicle Recommended Practice entitled: "Recommended Practice for a Serial Control and Communication Vehicle Network", Issued: 2000-04; Revised: 2005-01 (257 pages)	☐
	46	The book entitled: "The Image Processing Handbook", Sixth Edition, by John C. Russ, from CRC Press ISBN: 978-1-4398-4063-4, 2011 (858 pages)	☐
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	48	The Brown University publication CS-99-11 entitled: "A survey of hand Posture and Gesture Recognition Techniques and Technology", by Joseph J. LaViola Jr., June 1999 (80 pages)	☐
	49	Cisco Validated Design document entitled: "Building Automation System over IP (BAS/IP) Design and Implementation Guide" by Cisco Systems and Johnson Controls, 15 August 2008, v8.1 (107 pages)	☐
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If you wish to add additional non-patent literature document citation information please click the Add button			

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	~~13733614~~
	Filing Date	~~2013-03-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~.124 (2013-04-29) 1~~014-US2

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	First Named Inventor	Yehuda Binder
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	Examiner Name	
	Attorney Docket Number	BINDER-014-US2

CERTIFICATION STATEMENT

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OR

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Yehuda Binder/	Date (YYYY-MM-DD)	~~2016-11-27~~ 2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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PTO/SB/08a (01-22)
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	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8140658	B1	2012-03-20	Gelvin; David C. et al.	
	2	7844687	B1	2010-11-30	Gelvin; David C. et al.	
	3	7797367	B1	2010-09-14	Gelvin; David C. et al.	
	4	7020701	B1	2006-03-28	Gelvin; David C. et al.	
	5	6859831	B1	2005-02-22	Gelvin; David C. et al.	
	6	6832251	B1	2004-12-14	Gelvin; David C. et al.	
	7	6826607	B1	2004-11-30	Gelvin; David C. et al.	
	8	6735630	B1	2004-05-11	Gelvin; David C. et al.	

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	Attorney Docket Number	BINDER-014-US28

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20100328023	A1	2010-12-30	Thomson; Matthew B.	
	2	20120253480	A1	2012-10-04	Abe; Yuuichi	
	3	20110035491	A1	2011-02-10	Gelvin; David C. et al.	
	4	20100201516	A1	2010-08-12	Gelvin; David C. et al.	
	5	20100148940	A1	2010-06-17	Gelvin; David C. et al.	
	6	20120016678	A1	2012-01-19	Gruber; Thomas Robert et al.	
	7	20140286348	A1	2014-09-25	Haddad; Wassim et al.	
	8	20130091254	A1	2013-04-11	Haddad; Wassim et al.	
	9	20080077425	A1	2008-03-27	Johnson; Michael W. et al.	

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	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	10	20120283894	A1	2012-11-08	Naboulsi; Mouhamad Ahmad	
	11	20170111158	A1	2017-04-20	Nagrath; Aditya	
	12	20070076593	A1	2007-04-05	Sakurai; Kohei et al.	
	13	20080068156	A1	2008-03-20	Shimokawa; Isao et al.	
	14	20020103576	A1	2002-08-01	Takamura, Seiichi et al.	
	15	20060217840	A1	2006-09-28	Uehigashi; Naoya	
	16	20110118888	A1	2011-05-19	White, II; Melvin Joseph	
	17	20150295788	A1	2015-10-15	Witzman; Kevin R. et al.	
	18	20140236384	A1	2014-08-21	YOSHIMURA; Kentaro et al.	
	19	20140188343	A1	2014-07-03	YOSHIMURA; Kentaro et al.	
	20	20120303216	A1	2012-11-29	YOSHIMURA; Kentaro et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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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	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-05-28
Name/Print	Yehuda BINDER	Registration Number	73612

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	First Named Inventor	Yehuda Binder
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	1	20040267385	A1	2004-12-30	Ronald R. Lingemann	
	2	20180253069	A1	2018-09-06	Reza Raji	
	3	20080215391	A1	2008-09-04	Kevin J. Dowling	
	4	20160218884	A1	2016-07-28	Matthew P. EBROM	
	5	20110251807	A1	2011-10-13	Patrick A. Rada	

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	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	6	20120228952	A1	2012-09-13	Katherine L. Hall	
	7	20140170275	A1	2014-06-19	Domenic Bordin	
	8	20150226439	A1	2015-08-13	Conrad S. Mikulec	
	9	20120325197	A1	2012-12-27	Ferdinand Villegas Legaspi	
	10	20090183729	A1	2009-07-23	Sydney Barkhouse	
	11	20070220907	A1	2007-09-27	Gregory A. Ehlers	
	12	20120093132	A1	2012-04-19	Ahmadreza (Reza) Rofougaran	

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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Yehuda BINDER, U.S. Patent Agent
B.Sc.E.E.; M.Sc.E.E; M.B.A

May 28, 2024

U.S. Patent and Trademark Office (USPTO)
Customer Service Window
Mail Stop Patent Application
401 Dulany Street
Alexandria, VA 22314

Re: **New Utility Patent Application in U.S.**
Applicant(s): May Patents Ltd.
Title: SYSTEM AND METHOD FOR SERVER BASED CONTROL
Attorney Docket No.: BINDER-014-US28

Sir/Madam,

Attached herewith is the above-identified application for Letters Patent including:

1. Applicant asserts small entity status. See 37 CFR 1.27.
2. Application Data Sheet (PTO/AIA/14);
3. Specification (223 pages), Claims 1-29 (5 pages) and abstract (1 page).
4. Sixty (60) sheets of Drawings (Figures 1-25a)
5. Declaration

   [ ] Newly executed [X] Copy from prior application no. 13/733,634
6. Assignment submitted through EPAS

   [ ] Newly executed [X] Copy from prior application no. 13/733,634
7. Power of Attorney
8. Information Disclosure Statement (PTO/SB/08).
9. Certain documents were previously filed or cited to the USPTO in the prior applications, which is relied upon under 35 U.S.C. § 120. Applicant(s) identify these documents by attaching an Information Disclosure Statement listing these documents and request that they be considered and made of record in accordance with 37 CFR § 1.98(d). Per Section 1.98(d), copies of these documents need not be filed in the application.

e-mail: yehuda@maypatents.com; Mobile: +972-54-4444577; Tel.1-781-747-6018

MAY PATENTS LTD.
Yehuda BINDER, U.S. Patent Agent
B.Sc.E.E.; M.Sc.E.E; M.B.A

10. Electronic Payment in the amount of US$ 1,528.00 is being made by deposit account no. 506726 to cover filing fee calculated as follows:

Application as Filed				**Fee (US$)**
Basic Filing Fee				64.00
Search Fee				280.00
Examination Fee				320.00
Total Sheets	**Extra Sheets**		**Rate**	
(294*0.75)-100	120/50		168.00	504.00
Claims	**# Filed**	**# Extra**	**Rate**	
Total Claims	1-29	9	40.00	360.00
Independent Claims	3	--	192.00	--
Multiple Dependent Claim			344.00	--
Total Filing Fee				1,528.00

11. As in the prior applications, please associate the above referenced application with **Customer No. 131926**.
12. The Correspondence Address associated with **Customer No. 131926.**

Submitted by,
May Patents Ltd.

By: / Yehuda Binder /
Yehuda Binder
Registration No. 73,612

e-mail: yehuda@maypatents.com; Mobile: +972-54-4444577; Tel.1-781-747-6018

ABSTRACT

A system and method in a building or vehicle for an actuator operation in response to a sensor according to a control logic, the system comprising a router or a gateway communicating with a device associated with the sensor and a device associated with the actuator over in-building or in-vehicle networks, and an external Internet-connected control server associated with the control logic implementing a PID closed linear control loop and communicating with the router over external network for controlling the in-building or in-vehicle phenomenon. The sensor may be a microphone or a camera, and the system may include voice or image processing as part of the control logic. A redundancy is used by using multiple sensors or actuators, or by using multiple data paths over the building or vehicle internal or external communication. The networks may be wired or wireless, and may be BAN, PAN, LAN, WAN, or home networks.

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

Application Number	~~13733634~~
Filing Date	~~2013-03-01~~
First Named Inventor	BINDER Yehuda
Art Unit	
Examiner Name	
Attorney Docket Number	BINDER~~-19A (2013-01-29) 3~~ 014-US2

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Examiner Initial*	Cite No	Patent Number	Kind Code1	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7499239		2009-03-03	Chang; Michael	
	2	6285761		2001-04-09	Patel et al.	
	3	7512645		2009-31-03	Pitz et al.	
	4	7124157		2006-17-10	Ikake; Katsunori	
	5	4905176		1990-27-02	Schulz; Raymond A.	
	6	4853884		1989-01-08	Brown et al.	
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	8	8214070		2012-03-07	Grossmann et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	[redacted]
	Filing Date	[redacted]
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER[redacted]014-US2

	9	8180492		2012-15-05	Steinberg; John Douglas	
	10	6535243		2003-18-03	Tullis; Barclay J.	
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	Filing Date	~~2013-03-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~.101 (2013-04-29) C~~014-US2

	20	5987154		1999-16-11	Gibbon et al.	
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	Application Number	~~13733614~~
	Filing Date	~~2013-03-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~-40A (2013-04-29)~~-014-US2

	31	6526161		2003-25-02	Yan; Yong	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	[redacted]
	Filing Date	[redacted]01
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER[redacted]014-US2

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	48	5710833		1998-20-01	Moghaddam , et al.	

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U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	2	20080263117		2008-23-10	Rose et al.	

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~.12A (2012-04-29) 3~~014-US2

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	1							☐
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	1	ITU-T G.9960 entitled: "Unified high-speed wireline-based home networking transceivers – System architecture and physical layer specification", 12/2011 (160 pages)	☐
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	Application Number	[redacted]
	Filing Date	[redacted]01
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER[redacted]014-US2

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	9	RFC 2131 entitled: "Dynamic Host Configuration Protocol", March 1997 (46 pages)	☐
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	11	RFC 1034 entitled: "DOMAIN NAMES - CONCEPTS AND FACILITIES", November 1987 (56 pages)	☐
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	13	RFC 791 entitled: "Internet Protocol", September 1981 (52 pages)	☐
	14	ECMA-352 entitled: "Near Field Communication -- Interface and Protocol -2 (NFCIP-2)", by ECMA International, 2nd Edition/June 2010 (12 pages)	☐
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	16	IEEE Std 802.15.4™-2011, "IEEE Standard for Local and metropolitan area networks - Part 15.4: Low-Rate Wireless Personal Area Networks (LR-WPANs)", Approved 16 June 2011 (334 pages)	☐
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	Application Number	~~13/303,954~~
	Filing Date	~~2011-03-01~~
	First Named Inventor	BINDER Yehuda
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER~~.124 (2010-04-29) C~~ 014-US2

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	20	SUCKOW E.H., "Basics of High-Performance SerDes Design: Part I", Fairchild Semiconductor International, downloaded 10/2011 (8 pages).	☐
	21	"Hard-Disk Basics" compiled from PCGUIDE.COM by Mehedi Hasan, February 12, 2005 (738 pages)	☐

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	Application Number	
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	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

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Signature	/Yehuda Binder/	Date (YYYY-MM-DD)	~~2018-11-27~~ 2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7019646	B1	2006-03-28	Noel Woodard	

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	1	20130121239	A1	2013-05-16	John Alson Hicks	
	2	20130048319	A1	2013-02-28	William E. Glaub	
	3	20120236748	A1	2012-09-20	Edwin B. Brownrigg	
	4	20120229283	A1	2012-09-13	Cameron MCKENNA	
	5	20110082599	A1	2011-04-07	Makarand Shinde	

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	Application Number	
	Filing Date	
	First Named Inventor	Yehuda Binder
	Art Unit	
	Examiner Name	
	Attorney Docket Number	BINDER-014-US28

	6	20090051551	A1	2009-02-26	Hai D. Pham	
	7	20090042533	A1	2009-02-12	Karen D. Lontka	
	8	20080221715	A1	2008-09-11	Paul Krzyzanowski	
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	12	20050226201	A1	2005-10-13	Brian K. McMillin	
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	14	20040217857	A1	2004-11-04	Gary Lennartz	
	15	20010024163	A1	2001-09-27	Thomas D. Petite	
	16	20120112970	A1	2012-05-10	Ruben Caballero	

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	17	20120303150	A1	2012-11-29	Meenakshi Sundaram Krishnaswamy	

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	1	TP-LINK User Guide TL-POE10R, PoE Splitter, Rev. 3.0.0 Document Number – 7106503409, (Published 2010) (10 pages)	☐

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Name/Print	Yehuda Binder	Registration Number	73612

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

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	3	10213810		2019-02-26	Fabio Zsigmond	
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	5	10239094		2019-03-26	Fabio Zsigmond	
	6	9165320		2015-10-20	Brandon W. Belvin	
	7	10026116		2018-07-17	Meir ZOHAR	
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	7	20150324706	A1	2015-11-12	Jeremy B. Warren	
	8	20010041982	A1	2001-11-15	Toshinobu Kawasaki	

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	9	20150138333	A1	2015-05-21	Richard Wayne DeVaul	
	10	20080130520	A1	2008-06-05	Matthew P. Ebrom	
	11	20090046715	A1	2009-02-19	RICHARD A. MCCOY	
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	19	20100211359	A1	2010-08-19	Neelesh B. Mehta	

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	20	20120034904	A1	2012-02-09	Michael J. LeBeau	
	21	20090055019	A1	2009-02-26	Walter Dan Stiehl	
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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).

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☐ 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	/Yehuda Binder/	Date (YYYY-MM-DD)	2024-05-28
Name/Print	Yehuda Binder	Registration Number	73612

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System and Method for Server-Based Control

TECHNICAL FIELD

This disclosure relates generally to an apparatus and method for control such as in a building or in a vehicle using a server implementing gateway or control functionalities.

BACKGROUND

The Internet is a global system of interconnected computer networks that use the standardized Internet Protocol Suite (TCP/IP), including Transmission Control Protocol (TCP) and the Internet Protocol (IP), to serve billions of users worldwide. It is a network of networks that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic and optical networking technologies. The Internet carries a vast range of information resources and services, such as the interlinked hypertext documents on the World Wide Web (WWW) and the infrastructure to support electronic mail. The Internet backbone refers to the principal data routes between large, strategically interconnected networks and core routers in the Internet. These data routes are hosted by commercial, government, academic and other high-capacity network centers, the Internet exchange points and network access points that interchange Internet traffic between the countries, continents and across the oceans of the world. Traffic interchange between Internet service providers (often Tier 1 networks) participating in the Internet backbone exchange traffic by privately negotiated interconnection agreements, primarily governed by the principle of settlement-free peering.

The Internet Protocol (IP) is the principal communications protocol used for relaying datagrams (packets) across a network using the Internet Protocol Suite. Responsible for routing packets across network boundaries, it is the primary protocol that establishes the Internet. IP is the primary protocol in the Internet Layer of the Internet Protocol Suite and has the task of delivering datagrams from the source host to the destination host based on their addresses. For this purpose, IP defines addressing methods and structures for datagram encapsulation. Internet Protocol Version 4 (IPv4) is the dominant protocol of the Internet. IPv4 is described in Internet Engineering Task Force (IETF) Request for Comments (RFC) 791 and RFC 1349, and the successor, Internet Protocol Version 6 (IPv6), is currently active and in growing deployment worldwide. IPv4 uses 32-bit

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addresses (providing 4 billion: 4.3×10^9 addresses), while IPv6 uses 128-bit addresses (providing 340 undecillion or 3.4×10^{38} addresses), as described in RFC 2460.

The Internet Protocol is responsible for addressing hosts and routing datagrams (packets) from a source host to the destination host across one or more IP networks. For this purpose the Internet Protocol defines an addressing system that has two functions. Addresses identify hosts and provide a logical location service. Each packet is tagged with a header that contains the meta-data for the purpose of delivery. This process of tagging is also called encapsulation. IP is a connectionless protocol for use in a packet-switched Link Layer network, and does not need circuit setup prior to transmission. The aspects of delivery guaranteeing, proper sequencing, avoidance of duplicate delivery, and data integrity are addressed by an upper transport layer protocol (e.g., TCP - Transmission Control Protocol and UDP – User Datagram Protocol).

The main aspects of the IP technology are IP addressing and routing. Addressing refers to how end hosts become assigned IP addresses and how sub-networks of IP host addresses are divided and grouped together. IP routing is performed by all hosts, but most importantly by internetwork routers, which typically use either Interior Gateway Protocols (IGPs) or External Gateway Protocols (EGPs) to help make IP datagram forwarding decisions across IP connected networks. Core routers serving in the Internet backbone commonly use the Border Gateway Protocol (BGP) as per RFC 4098 or Multi-Protocol Label Switching (MPLS). Other prior art publications relating to Internet related protocols and routing include the following chapters of the publication number 1-587005-001-3 by Cisco Systems, Inc. (7/99) entitled: "Internetworking Technologies Handbook", which are all incorporated in their entirety for all purposes as if fully set forth herein: Chapter 5: "Routing Basics" (pages 5-1 to 5-10), Chapter 30: "Internet Protocols" (pages 30-1 to 30-16), Chapter 32: "IPv6" (pages 32-1 to 32-6), Chapter 45: "OSI Routing" (pages 45-1 to 45-8) and Chapter 51: "Security" (pages 51-1 to 51-12), as well as IBM Corporation, International Technical Support Organization Redbook Documents No. GG24-4756-00 entitled: "Local area Network Concepts and Products: LAN Operation Systems and management", 1st Edition May 1996, Redbook Document No. GG24-4338-00 entitled: "Introduction to Networking Technologies", 1st Edition April 1994, Redbook Document No. GG24-2580-01 "IP Network Design Guide", 2nd Edition June 1999, and Redbook Document No. GG24-3376-07 "TCP/IP Tutorial and Technical Overview", ISBN 0738494682 8th Edition Dec. 2006, which are incorporated in their entirety for all purposes as if fully set forth herein.

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A Wireless Mesh Network (WMN) and Wireless Distribution Systems (WDS) are known in the art to be a communication network made up of clients, mesh routers and gateways organized in a mesh topology and connected using radio. Such wireless networks may be based on DSR as the routing protocol. WMNs are standardized in IEEE 802.11s and described in a slide-show by W. Steven Conner, Intel Corp. *et al.* entitled: "IEEE 802.11s Tutorial" presented at the IEEE 802 Plenary, Dallas on Nov. 13, 2006, in a slide-show by Eugen Borcoci of University Politehnica Bucharest, entitled: "Wireless Mesh Networks Technologies: Architectures, Protocols, Resource Management and Applications", presented in INFOWARE Conference on August 22-29th 2009 in Cannes, France, and in an IEEE Communication magazine paper by Joseph D. Camp and Edward W. Knightly of Electrical and Computer Engineering, Rice University, Houston, TX, USA, entitled: "The IEEE 802.11s Extended Service Set Mesh Networking Standard", which are incorporated in their entirety for all purposes as if fully set forth herein. The arrangement described herein can be equally applied to such wireless networks, wherein two clients exchange information using different paths by using mesh routers as intermediate and relay servers. Commonly in wireless networks, the routing is based on MAC addresses. Hence, the above discussion relating to IP addresses applies in such networks to using the MAC addresses for identifying the client originating the message, the mesh routers (or gateways) serving as the relay servers, and the client serving as the ultimate destination computer.

The Internet architecture employs a client-server model, among other arrangements. The terms 'server' or 'server computer' relates herein to a device or computer (or a plurality of computers) connected to the Internet and is used for providing facilities or services to other computers or other devices (referred to in this context as 'clients') connected to the Internet. A server is commonly a host that has an IP address and executes a 'server program', and typically operates as a socket listener. Many servers have dedicated functionality such as web server, Domain Name System (DNS) server (described in RFC 1034 and RFC 1035), Dynamic Host Configuration Protocol (DHCP) server (described in RFC 2131 and RFC 3315), mail server, File Transfer Protocol (FTP) server and database server. Similarly, the term 'client' herein refers to a program or to a device or a computer (or a series of computers) executing this program, which accesses a server over the Internet for a service or a resource. Clients commonly initiate connections that a server may accept. For non-limiting example, web browsers are clients that connect to web servers for retrieving web pages, and email clients connect to mail storage servers for retrieving mails.

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Software as a Service (SaaS) is a Software Application (SA) supplied by a service provider, namely, a SaaS Vendor. The service is supplied and consumed over the internet, thus eliminating requirements to install and run applications locally on a site of a customer as well as simplifying maintenance and support. Particularly it is advantageous in massive business applications. Licensing is a common form of billing for the service and it is paid periodically. SaaS is becoming ever more common as a form of SA delivery over the Internet and is being facilitated in a technology infrastructure called "Cloud Computing". In this form of SA delivery, where the SA is controlled by a service provider, a customer may experience stability and data security issues. In many cases the customer is a business organization that is using the SaaS for business purposes such as business software, hence, stability and data security are primary requirements.

The term "Cloud computing" as used herein is defined as a technology infrastructure facilitating supplement, consumption and delivery of IT services. The IT services are internet based and may involve elastic provisioning of dynamically scalable and time virtualized resources. The term "Software as a Service (SaaS)" as used herein in this application, is defined as a model of software deployment whereby a provider licenses an SA to customers for use as a service on demand. The term "customer" as used herein in this application, is defined as a business entity that is served by an SA, provided on the SaaS platform. A customer may be a person or an organization and may be represented by a user that responsible for the administration of the application in aspects of permissions configuration, user related configuration, and data security policy.

The term "SaaS Platform" as used herein in this application is defined as a computer program that acts as a host to SAs that reside on it. Essentially, a SaaS platform can be considered as a type of specialized SA server. The platform manages underlying computer hardware and software resources and uses these resources to provide hosted SAs with multi-tenancy and on-demand capabilities, commonly found in SaaS applications. Generally, the hosted SAs are compatible with SaaS platform and support a single group of users. The platform holds the responsibility for distributing the SA as a service to multiple groups of users over the internet. The SaaS Platform can be considered as a layer of abstraction above the traditional application server, creating a computing platform that parallels the value offered by the traditional operating system, only in a web-centric fashion. The SaaS platform responds to requirements of software developers. The requirements are to reduce time and difficulty involved in developing highly available SAs, and on-demand enterprise grade business SAs.

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ZigBee is a specification for a suite of high level communication protocols using small, low-power digital radios based on an IEEE 802 standard for personal area networks. Applications include wireless light switches, electrical meters with in-home-displays, and other consumer and industrial equipment that require short-range wireless transfer of data at relatively low rates. The technology defined by the ZigBee specification is intended to be simpler and less expensive than other WPANs, such as Bluetooth. ZigBee is targeted at radio-frequency (RF) applications that require a low data rate, long battery life, and secure networking. ZigBee has a defined rate of 250 kbps suited for periodic or intermittent data or a single signal transmission from a sensor or input device.

ZigBee builds upon the physical layer and medium access control defined in IEEE standard 802.15.4 (2003 version) for low-rate WPANs. The specification goes on to complete the standard by adding four main components: network layer, application layer, ZigBee Device Objects (ZDOs) and manufacturer-defined application objects which allow for customization and favor total integration. Besides adding two high-level network layers to the underlying structure, the most significant improvement is the introduction of ZDOs. These are responsible for a number of tasks, which include keeping of device roles, management of requests to join a network, device discovery and security. Because ZigBee nodes can go from sleep to active mode in 30 ms or less, the latency can be low and devices can be responsive, particularly compared to Bluetooth wake-up delays, which are typically around three seconds. ZigBee nodes can sleep most of the time, thus average power consumption can be lower, resulting in longer battery life.

There are three different types of ZigBee devices: ZigBee coordinator (ZC), which are the most capable device, the coordinator forms the root of the network tree and might bridge to other networks. There is exactly one ZigBee coordinator in each network since it is the device that started the network originally. It is able to store information about the network, including acting as the Trust Center & repository for security keys. ZigBee Router (ZR) may be running an application function as well as can acting as an intermediate router, passing on data from other devices. ZigBee End Device (ZED) contains functionality to talk to the parent node (either the coordinator or a router). This relationship allows the node to be asleep a significant amount of the time thereby giving long battery life. A ZED requires the least amount of memory, and therefore can be less expensive to manufacture than a ZR or ZC.

The protocols build on recent algorithmic research (Ad-hoc On-demand Distance Vector, neuRFon) to automatically construct a low-speed ad-hoc network of nodes. In most large network

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instances, the network will be a cluster of clusters. It can also form a mesh or a single cluster. The current ZigBee protocols support beacon and non-beacon enabled networks. In non-beacon-enabled networks, an unslotted CSMA/CA channel access mechanism is used. In this type of network, ZigBee Routers typically have their receivers continuously active, requiring a more robust power supply. However, this allows for heterogeneous networks in which some devices receive continuously, while others only transmit when an external stimulus is detected.

In beacon-enabled networks, the special network nodes called ZigBee Routers transmit periodic beacons to confirm their presence to other network nodes. Nodes may sleep between the beacons, thus lowering their duty cycle and extending their battery life. Beacon intervals depend on the data rate; they may range from 15.36 milliseconds to 251.65824 seconds at 250 Kbit/s, from 24 milliseconds to 393.216 seconds at 40 Kbit/s and from 48 milliseconds to 786.432 seconds at 20 Kbit/s. In general, the ZigBee protocols minimize the time the radio is on, so as to reduce power use. In beaconing networks, nodes only need to be active while a beacon is being transmitted. In non-beacon-enabled networks, power consumption is decidedly asymmetrical: some devices are always active, while others spend most of their time sleeping.

Except for the Smart Energy Profile 2.0, current ZigBee devices conform to the IEEE 802.15.4-2003 Low-Rate Wireless Personal Area Network (LR-WPAN) standard. The standard specifies the lower protocol layers—the PHYsical layer (PHY), and the Media Access Control (MAC) portion of the Data Link Layer (DLL). The basic channel access mode is "Carrier Sense, Multiple Access / Collision Avoidance" (CSMA/CA). That is, the nodes talk in the same way that people converse; they briefly check to see that no one is talking before they start. There are three notable exceptions to the use of CSMA. Beacons are sent on a fixed timing schedule, and do not use CSMA. Message acknowledgments also do not use CSMA. Finally, devices in Beacon Oriented networks that have low latency real-time requirements may also use Guaranteed Time Slots (GTS), which by definition do not use CSMA.

Z-Wave is a wireless communications protocol by the Z-Wave Alliance (http://www.z-wave.com) designed for home automation, specifically for remote control applications in residential and light commercial environments. The technology uses a low-power RF radio embedded or retrofitted into home electronics devices and systems, such as lighting, home access control, entertainment systems and household appliances. Z-Wave communicates using a low-power wireless technology designed specifically for remote control applications. Z-Wave operates in the sub-

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gigahertz frequency range, around 900 MHz. This band competes with some cordless telephones and other consumer electronics devices, but avoids interference with WiFi and other systems that operate on the crowded 2.4 GHz band. Z-Wave is designed to be easily embedded in consumer electronics products, including battery operated devices such as remote controls, smoke alarms and security sensors.

Z-Wave is a mesh networking technology where each node or device on the network is capable of sending and receiving control commands through walls or floors and use intermediate nodes to route around household obstacles or radio dead spots that might occur in the home. Z-Wave devices can work individually or in groups, and can be programmed into scenes or events that trigger multiple devices, either automatically or via remote control. The Z-wave radio specifications include bandwidth of 9,600 bit/s or 40 Kbit/s, fully interoperable, GFSK modulation, and a range of approximately 100 feet (or 30 meters) assuming "open air" conditions, with reduced range indoors depending on building materials, etc. The Z-Wave radio uses the 900 MHz ISM band: 908.42 MHz (United States); 868.42 MHz (Europe); 919.82 MHz (Hong Kong); 921.42 MHz (Australia/New Zealand).

Z-Wave uses a source-routed mesh network topology and has one or more master controllers that control routing and security. The devices can communicate to another by using intermediate nodes to actively route around and circumvent household obstacles or radio dead spots that might occur. A message from node A to node C can be successfully delivered even if the two nodes are not within range, providing that a third node B can communicate with nodes A and C. If the preferred route is unavailable, the message originator will attempt other routes until a path is found to the "C" node. Therefore a Z-Wave network can span much farther than the radio range of a single unit; however with several of these hops a delay may be introduced between the control command and the desired result. In order for Z-Wave units to be able to route unsolicited messages, they cannot be in sleep mode. Therefore, most battery-operated devices are not designed as repeater units. A Z-Wave network can consist of up to 232 devices with the option of bridging networks if more devices are required.

Most existing offices and some of the newly built buildings facilitate the network structure based on dedicated wiring. However, implementing such a network in existing buildings typically requires installation of new wiring infrastructure. Such installation of new wiring may be impractical, expensive and problematic. As a result, many technologies (referred to as “no new wires”

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technologies) have been proposed in order to facilitate a LAN in a building without adding new wiring. Some of these techniques use existing utility wiring installed primarily for other purposes such as telephone, electricity, cable television (CATV), and so forth. Such approach offers the advantage of being able to install such systems and networks without the additional and often substantial cost of installing separate wiring within the building.

The technical aspect for allowing the wiring to carry both the service (such as telephony, electricity and CATV) and the data communication signals commonly involves using an FDM technique (Frequency Division Multiplexing). In such configuration, the service signal and the data communication signals are carried across the respective utility wiring each using a distinct frequency spectrum band. The concept of FDM is known in the art, and provides means of splitting the bandwidth carried by a medium such as wiring. In the case of a telephone wiring carrying both telephony and data communication signals, the frequency spectrum is split into a low-frequency band capable of carrying an analog telephony signal and a high-frequency band capable of carrying data communication or other signals.

A network in a house based on using powerline-based home network is also known in the art. The medium for networking is the in-house power lines, which is used for carrying both the AC power (mains) power and the data communication signals. A PLC (Power Line Carrier) modem converts a data communication signal (such as Ethernet IEEE802.3) to a signal which can be carried over the power lines, without affecting and being affected by the power signal available over those wires. A consortium named HomePlug (www.homeplug.org) is active in standardizing powerline technologies. A powerline communication system is described in U.S. Patent No. 6,243,571 to Bullock *et al.*, which also provides a comprehensive list of prior art publications referring to powerline technology and applications. A non-limiting example for such PLC modem housed as a snap-on module is HomePlug1.0 based Ethernet-to-Powerline Bridge model DHP-100 from D-Link® Systems, Inc. of Irvine, California, USA. Outlets with built in PLC modems for use with combined data and power using powerlines are described in U.S. Patent Application Publication 2003/0062990 to Schaeffer *et al.* entitled 'Powerline Bridge Apparatus'. Such power outlets are available as part of PlugLAN™ by Asoka USA Corporation of San Carlos, CA, USA.

Similarly, carrying data over existing in home CATV coaxial cabling is also known in the art, for example in U.S. Patent Application Publication No. 2002/0166124 to Gurantz *et al.* A non-limiting example of home networking over CATV coaxial cables using outlets is described in U.S.

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Patent Application Publication No. 2002/0194383 to Cohen *et al.* Such outlets are available as part of HomeRAN™ system from TMT Ltd. of Jerusalem, Israel.

The term "telephony" herein denotes in general any kind of telephone service, including analog and digital service, such as Integrated Services Digital Network (ISDN). Analog telephony, popularly known as "Plain Old Telephone Service" ("POTS") has been in existence for over 100 years, and is suited for the transmission and switching of voice signals in the 300-3400 Hz portion (or "voice band" or "telephone band") of the audio spectrum. The familiar POTS network supports real-time, low-latency, high-reliability, moderate-fidelity voice telephony, and is capable of establishing a session between two end-points, each using an analog telephone set.

The terms "telephone", "telephone set", and "telephone device" herein denote any apparatus, without limitation, which can connect to a Public Switch Telephone Network ("PSTN"), including apparatus for both analog and digital telephony, non-limiting examples of which are analog telephones, digital telephones, facsimile ("fax") machines, automatic telephone answering machines, voice modems, and data modems. In-home telephone service usually employs two or four wires, to which telephone sets are connected via telephone outlets.

Similarly to the powerlines and CATV cabling described above, it is often desirable to use existing telephone wiring simultaneously for both telephony and data networking. In this way, establishing a new local area network in a home or other building is simplified, because there is no need to install additional wiring. Using FDM technique to carry video over active residential telephone wiring is disclosed by U.S Patent No. 5,010,399 to Goodman *et al.* entitled: "Video Transmission and Control System Utilizing Internal Telephone Lines", and U.S. Patent No. 5,621,455 to Rogers *et al.* entitled: "Video Modem for Transmitting Video Data over Ordinary Telephone Wires", which are both incorporated in their entirety for all purposes as if fully set forth herein.

Existing products for carrying data digitally over residential telephone wiring concurrently with active telephone service by using FDM commonly uses a technology known as HomePNA (Home Phoneline Networking Alliance) (www.homepna.org). This phoneline interface has been standardized as ITU-T (ITU Telecommunication Standardization Sector) recommendation G.989.1. The HomePNA technology is described in U.S. Patent No. 6,069,899 to Foley, U.S. Patent No. 5,896,443 to Dichter, U.S. Patent Application No. 2002/0019966 to Yagil *et al.*, U.S. Patent Application Publication No. 2003/0139151 to Lifshitz *et al.*, and others. The available bandwidth over the wiring is split into a low-frequency band capable of carrying an analog telephony signal

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(POTS), and a high-frequency band is allocated for carrying data communication signals. In such FDM based configuration, telephony is not affected, while a data communication capability is provided over existing telephone wiring within a home.

Prior art technologies for using the in-place telephone wiring for data networking are based on single carrier modulation techniques, such as AM (Amplitude Modulation), FM (Frequency Modulation) and PM (Phase Modulation), as well as bit encoding techniques such as QAM (Quadrature Amplitude Modulation) and QPSK (Quadrature Phase Shift Keying). Spread spectrum technologies, to include both DSSS (Direct Sequence Spread Spectrum) and FHSS (Frequency Hopping Spread Spectrum) are known in the art. Spread spectrum commonly employs Multi-Carrier Modulation (MCM) such as OFDM (Orthogonal Frequency Division Multiplexing). OFDM and other spread spectrum are commonly used in wireless communication systems, and in particular in WLAN networks. As explained in the document entitled "IEEE 802.11g Offers Higher Data Rates and Longer Range" to Jim Zyren *et al.* by Intersil which is hereby incorporated by reference, multi-carrier modulation (such as OFDM) is employed in such systems in order to overcome the signal impairment due to multipath.

A popular approach to home networking (as well as office and enterprise environments) is communication via radio frequency (RF) distribution system that transports RF signals throughout a building to and from data devices. Commonly referred to as Wireless Local Area Network (WLAN), such communication makes use of the Industrial, Scientific and Medical (ISM) frequency spectrum. In the US, three of the bands within the ISM spectrum are the A band, 902-928 MHz; the B band, 2.4-2.484 GHz (a.k.a. 2.4 GHz); and the C band, 5.725-5.875 GHz (a.k.a. 5 GHz). Overlapping and / or similar bands are used in different regions such as Europe and Japan.

In order to allow interoperability between equipment manufactured by different vendors, few WLAN standards have evolved, as part of the IEEE 802.11 standard group, branded as WiFi (www.wi-fi.org). IEEE 802.11b describes a communication using the 2.4GHz frequency band and supporting communication rate of 11Mb/s, IEEE 802.11a uses the 5GHz frequency band to carry 54MB/s and IEEE 802.11g uses the 2.4 GHz band to support 54Mb/s.

A node / client with a WLAN interface is commonly referred to as STA (Wireless Station / Wireless client). The STA functionality may be embedded as part of the data unit, or alternatively be a dedicated unit, referred to as bridge, coupled to the data unit. While STAs may communicate without any additional hardware (ad-hoc mode), such network usually involves Wireless Access Point (a.k.a.

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WAP or AP) as a mediation device. The WAP implements the Basic Stations Set (BSS) and / or ad-hoc mode based on Independent BSS (IBSS). STA, client, bridge and WAP will be collectively referred to hereon as WLAN unit.

Bandwidth allocation for IEEE 802.11g wireless in the U.S. allows multiple communication sessions to take place simultaneously, where eleven overlapping channels are defined spaced 5MHz apart, spanning from 2412 MHz as the center frequency for channel number 1, via channel 2 centered at 2417 MHz and 2457 MHz as the center frequency for channel number 10, up to channel 11 centered at 2462 MHz. Each channel bandwidth is 22MHz, symmetrically (+/-11 MHz) located around the center frequency. In the transmission path, first the baseband signal (IF) is generated based on the data to be transmitted, using 256 QAM (Quadrature Amplitude Modulation) based OFDM (Orthogonal Frequency Division Multiplexing) modulation technique, resulting a 22 MHz (single channel wide) frequency band signal. The signal is then up converted to the 2.4 GHz (RF) and placed in the center frequency of required channel, and transmitted to the air via the antenna. Similarly, the receiving path comprises a received channel in the RF spectrum, down converted to the baseband (IF) wherein the data is then extracted.

FIG.1 shows an arrangement **10** according to the prior art including a residence **19** which may be connected via the Internet **16** to many multiple servers, such as a server **17**. In the premises **19** there may be multiple internal networks, such as home network **14a** connecting the desktop computer **18a** and a home device **15a**, and other connected equipment may as well be connected. Similarly, home network **14b** is shown connecting desktop computer **18b** and a home device **15b**, and other connected equipment may as well be connected. A sensor network **12** may further be used, connecting sensor units **13a**, **13b** and **13c**. The sensor network **12** may be based on ZigBee protocol or another public or proprietary commercially accepted protocol, or any suitable protocol now known or becoming known to those skilled in the art in the present context. A gateway **11** is connected, via suitable ports, to the various networks in the residence **19**, and allows communication between devices in a specific network, between networks in the residence **19**, and further provides external connection to the Internet **16**, typically via a WAN network. While three internal networks **12**, **14a** and **14b** are shown in arrangement **10**, one, two, four, or any number of such internal networks may be equally deployed. Further, the various networks inside the premises **19** may be the same, similar or different. For example, the same or different network mediums may be used, such as wired or wireless networks, and the same or different network protocols may be used. Further, each of the

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networks may be a LAN (Local Area Network), WLAN (Wireless LAN), PAN (Personal Area Network), or WPAN (Wireless PAN). The gateway **11** is typically a dedicated hardware and software integrated device, and is based on a firmware and a processor. A prior-art architecture involving moving limited management functions of a home gateway onto network cloud is described in the paper entitled: "Home Network with Cloud Computing for Home Management", by Katsuya Suzuki and Masahiro Inoue, IEEE 15th International Symposium on Consumer Electronics, 2011, pages 421-425, which is incorporated in its entirety for all purposes as if fully set forth herein. The gateway **11** is known in the art and is sometimes referred to as Residential Gateway (RG) or Home Gateway, and serves to connect devices in the home (commonly via a home network) to the Internet or other WAN. Such RG may include a broadband modem (such as DSL or cable modem), a firewall, a router, a packet-switch, and a Wireless Access Point (WAP). The RG is typically manageable and support auto-configuration, and may support various type services, as well as Quality-of-Service (QoS). All the interconnections described herein may be achieved by direct connection of components or by indirect coupling through a suitable connector, interface or other hardware and/or software components enabling the exchange of signals between the coupled components.

There is a growing widespread use of the Internet for carrying multimedia, such as video and audio. Various audio services include Internet-radio stations and VoIP (Voice-over-IP). Video services over the Internet include video conferencing and IPTV (IP Television). In most cases, the multimedia service is a real-time (or near real-time) application, and thus sensitive to delays over the Internet. In particular, two-way services such a VoIP or other telephony services and video-conferencing are delay sensitive. In some cases, the delays induced by the encryption process, as well as the hardware / software costs associated with the encryption, render encryption as non-practical. Therefore, it is not easy to secure enough capacity of the Internet accessible by users to endure real-time communication applications such as Internet games, chatting, VoIP, MoIP (Multimedia-over-IP), etc. In this case, there may be a data loss, delay or severe jitter in the course of communication due to the property of an Internet protocol, thereby causing inappropriate real-time video communication. The following chapters of the publication number 1-587005-001-3 by Cisco Systems, Inc. (7/99) entitled: "Internetworking Technologies Handbook", relate to multimedia carried over the Internet, and are all incorporated in their entirety for all purposes as if fully set forth herein: Chapter 18: "Multiservice Access Technologies" (pages 18-1 to 18-10), and Chapter 19: "Voice / Data Integration Technologies" (pages 19-1 to 19-30).

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VoIP systems in widespread use today fall into three groups: systems using the ITU-T H.323 protocol, systems using the SIP protocol, and systems that use proprietary protocols. H.323 is a standard for teleconferencing that was developed by the International Telecommunications Union (ITU). It supports full multimedia audio, video and data transmission between groups of two or more participants, and it is designed to support large networks. H.323 is network-independent: it can be used over networks using transport protocols other than TCP/IP. H.323 is still a very important protocol, but it has fallen out of use for consumer VoIP products due to the fact that it is difficult to make it work through firewalls that are designed to protect computers running many different applications. It is a system best suited to large organizations that possess the technical skills to overcome these problems.

SIP (for Session Initiation Protocol) is an Internet Engineering Task Force (IETF) standard signaling protocol for teleconferencing, telephony, presence and event notification and instant messaging. It provides a mechanism for setting up and managing connections, but not for transporting the audio or video data. It is probably now the most widely used protocol for managing Internet telephony. Like the IETF protocols, SIP is defined in a number of RFCs, principally RFC 3261. A SIP-based VoIP implementation may send the encoded voice data over the network in a number of ways. Most implementations use Real-time Transport Protocol (RTP), which is defined in RFC 3550. Both SIP and RTP are implemented on UDP, which, as a connectionless protocol, can cause difficulties with certain types of routers and firewalls. Usable SIP phones therefore also need to use STUN (for Simple Traversal of UDP over NAT), a protocol defined in RFC 3489 that allows a client behind a NAT router to find out its external IP address and the type of NAT device.

The connection of peripherals and memories to a processor may be via a bus. A communication link (such as Ethernet, or any other LAN, PAN or WAN communication link) may also be regarded as bus herein. A bus may be an internal bus (a.k.a. local bus), primarily designed to connect a processor or CPU to peripherals inside a computer system enclosure, such as connecting components over the motherboard or backplane. Alternatively, a bus may be an external bus, primarily intended for connecting the processor or the motherboard to devices and peripherals external to the computer system enclosure. Some buses may be doubly used as internal or as external buses. A bus may be of parallel type, where each word (address or data) is carried in parallel over multiple electrical conductors or wires; or alternatively, may be bit-serial, where bits are carried sequentially, such as one bit at a time. A bus may support multiple serial links or lanes, aggregated or

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bonded for higher bit-rate transport. Non-limiting examples of internal parallel buses include ISA (Industry Standard architecture); EISA (Extended ISA); NuBus (IEEE 1196); PATA - Parallel ATA (Advanced Technology Attachment) variants such as IDE, EIDE, ATAPI, SBus (IEEE 1496), VESA Local Bus (VLB), PCI and PC/104 variants (PC/104, PC/104 Plus, and PC/104 Express). Non-limiting examples of internal serial buses include PCIe (PCI Express), Serial ATA (SATA), SMBus, and Serial Peripheral Bus (SPI) bus. Non-limiting examples of external parallel buses include HIPPI (HIgh Performance Parallel Interface), IEEE-1284 ('Centronix'), IEEE-488 (a.k.a. GPIB – General Purpose Interface Bus) and PC Card / PCMCIA. Non-limiting examples of external serial buses include USB (Universal Serial Bus), eSATA and IEEE 1394 (a.k.a. Firewire). Non-limiting examples of buses that can be internal or external are Futurebus, InfiniBand, SCSI (Small Computer System Interface), and SAS (Serial Attached SCSI). The bus medium may be based on electrical conductors, commonly copper wires based cable (may be arranged as twisted-pairs) or a fiber-optic cable. The bus topology may use point-to-point, multi-drop (electrical parallel) and daisy-chain, and may further be based on hubs or switches. A point-to-point bus may be full-duplex, providing simultaneous, two-way transmission (and sometimes independent) in both directions, or alternatively a bus may be half-duplex, where the transmission can be in either direction, but only in one direction at a time. Buses are further commonly characterized by their throughput (data bit-rate), signaling rate, medium length, connectors and medium types, latency, scalability, quality-of-service, devices per connection or channel, and supported bus-width. A configuration of a bus for a specific environment may be automatic (hardware or software based, or both), or may involve user or installer activities such as software settings or jumpers. Recent buses are self-repairable, where spare connection (net) is provided which is used in the event of malfunction in a connection. Some buses support hot-plugging (sometimes known as hot swapping), where a connection or a replacement can be made, without significant interruption to the system or without the need to shut-off any power. A well-known example of this functionality is the Universal Serial Bus (USB) that allows users to add or remove peripheral components such as a mouse, keyboard, or printer. A bus may be defined to carry a power signal, either in separate dedicated cable (using separate and dedicated connectors), or commonly over the same cable carrying the digital data (using the same connector). Typically dedicated wires in the cable are used for carrying a low-level DC power level, such as 3.3VDC, 5VDC, 12VDC and any combination thereof. A bus may support master / slave configuration, where one connected node is typically a bus master (e.g., the processor or the processor-side), and other nodes (or node) are bussed

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slaves. A slave may not connect or transmit to the bus until given permission by the bus master. A bus timing, strobing, synchronization, or clocking information may be carried as a separate signal (e.g., clock signal) over a dedicated channel, such as separate and dedicated wired in a cable, or alternatively may use embedded clocking (a.k.a. self-clocking), where the timing information is encoded with the data signal, commonly used in line codes such as Manchester code, where the clock information occurs at the transition points. Any bus or connection herein may use proprietary specifications, or preferably be similar to, based on, substantially according to, or fully compliant with, an industry standard (or any variant thereof) such as those referred to as PCI Express, SAS, SATA, SCSI, PATA, InfiniBand, USB, PCI, PCI-X, AGP, Thunderbolt, IEEE 1394, FireWire and Fibre Channel.

In consideration of the foregoing, it would be an advancement in the art to provide an improved networking or gateway functionality method and system that is simple, secure, cost-effective, reliable, easy to use or sanitize, has a minimum part count, minimum hardware, and / or uses existing and available components, protocols, programs and applications for providing better security and additional functionalities, and provides a better user experience.

SUMMARY

Environment control networks are networks of sensors and controller which provide an optimized solution for an environment control. The environment can be a house, agricultural farm, city traffic systems etc. The sensors will provide information on the environmental conditions and events. The controller will allow automatic control or control by the user via the Internet. Presently, a dedicated hardware gateway is required to control the wireless network in each environment. The disclosure describes how the dedicated gateway can be replaced by a cloud server, offering much better cost, reliability and level of service.

Any communication or connection herein, such as the connection of peripherals in general, and memories in particular to a processor, may use a bus. A communication link (such as Ethernet, or any other LAN, PAN or WAN communication links may also be regarded as buses herein. A bus may be an internal bus, an external bus or both. A bus may be a parallel or a bit-serial bus. A bus may be based on a single or on multiple serial links or lanes. The bus medium may electrical conductors based such as wires or cables, or may be based on a fiber-optic cable. The bus topology may use point-to-point, multi-drop (electrical parallel) and daisy-chain, and may be based on hubs or switches.

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A point-to-point bus may be full-duplex, or half-duplex. Further, a bus may use proprietary specifications, or may be based on, similar to, substantially or fully compliant to an industry standard (or any variant thereof), and may be hot-pluggable. A bus may be defined to carry only digital data signals, or may also defined to carry a power signal (commonly DC voltages), either in separated and dedicated cables and connectors, or may carry the power and digital data together over the same cable. A bus may support master / slave configuration. A bus may carry a separated and dedicated timing signal or may use self-clocking line-code.

A sensor unit may include one or more sensors, each providing an electrical output signal (such as voltage or current), or changing a characteristic (such as resistance or impedance) in response to a measured or detected phenomenon. The sensors may be identical, similar or different from each other, and may measure or detect the same or different phenomena. Two or more sensors may be connected in series or in parallel. In the case of a changing characteristic sensor or in the case of an active sensor, the unit may include an excitation or measuring circuits (such as a bridge) to generate the sensor electrical signal. The sensor output signal may be conditioned by a signal conditioning circuit. The signal conditioner may involve time, frequency, or magnitude related manipulations. The signal conditioner may be linear or non-linear, and may include an operation or an instrument amplifier, a multiplexer, a frequency converter, a frequency-to-voltage converter, a voltage-to-frequency converter, a current-to-voltage converter, a current loop converter, a charge converter, an attenuator, a sample-and-hold circuit, a peak-detector, a voltage or current limiter, a delay line or circuit, a level translator, a galvanic isolator, an impedance transformer, a linearization circuit, a calibrator, a passive or active (or adaptive) filter, an integrator, a deviator, an equalizer, a spectrum analyzer, a compressor or a de-compressor, a coder (or decoder), a modulator (or demodulator), a pattern recognizer, a smoother, a noise remover, an average or RMS circuit, or any combination thereof. In the case of analog sensor, an analog to digital (A/D) converter may be used to convert the conditioned sensor output signal to a digital sensor data. The unit may include a computer for controlling and managing the unit operation, processing the digital sensor data and handling the unit communication. The unit may include a modem or transceiver coupled to a network port (such as a connector or antenna), for interfacing and communicating over a network.

The sensor may be a CCD or CMOS based image sensor, for capturing still or video images. The image capturing hardware integrated with the unit may contain a photographic lens (through a lens opening) focusing the required image onto an image sensor. The image may be converted into a

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digital format by an image sensor AFE (Analog Front End) and an image processor. An image or video compressor for compression of the image information may be used for reducing the memory size and reducing the data rate required for the transmission over the communication medium. Similarly, the sensor may be a voice sensor such as a microphone, and may similarly include a voice processor or a voice compressor (or both). The image or voice compression may be standard or proprietary, may be based on intraframe or interframe compression, and may be lossy or non-lossy compression.

An actuator unit may include one or more actuators, each affecting or generating a physical phenomenon in response to an electrical command, which can be an electrical signal (such as voltage or current), or by changing a characteristic (such as resistance or impedance) of a device. The actuators may be identical, similar or different from each other, and may affect or generate the same or different phenomena. Two or more actuators may be connected in series or in parallel. The actuator command signal may be conditioned by a signal conditioning circuit. The signal conditioner may involve time, frequency, or magnitude related manipulations. The signal conditioner may be linear or non-linear, and may include an amplifier, a voltage or current limiter, an attenuator, a delay line or circuit, a level translator, a galvanic isolator, an impedance transformer, a linearization circuit, a calibrator, a passive or active (or adaptive) filter, an integrator, a deviator, an equalizer, a spectrum analyzer, a compressor or a de-compressor, a coder (or decoder), a modulator (or demodulator), a pattern recognizer, a smoother, a noise remover, an average or RMS circuit, or any combination thereof. In the case of analog actuator, a digital to analog (D/A) converter may be used to convert the digital command data to analog signals for controlling the actuators. The unit may include a computer for controlling and managing the unit operation, processing the actuators commands and handling the unit communication. The unit may include a modem or transceiver coupled to a communication port (such as a connector or antenna), for interfacing and communicating over a network.

A sensor / actuator unit is a device integrating a part or whole of a sensor unit with part or whole of an actuator unit. For a non-limiting example, such hardware integration may relate to housing in the same enclosure, sharing the same connector (power, communication or any other connector), sharing the same power source or power supply, sharing PCB or other mechanical support, sharing the same processor or computer, sharing the same modem or transceiver, or sharing the same communication port. A sensor actuator unit may include one or more sensors, each with its associated signal conditioner and A/D (if required), and one or more actuators, each with its associated

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signal conditioner and D/A, if required. A sensor unit, an actuator unit, and a sensor / actuator unit are collectively referred to as 'field units'.

A field unit may be powered in part or in whole from AC or DC power source. A local powering scheme may be used, where the power source may be integrated with field unit, such as within the same enclosure, or a remote powering scheme may be used, where the power source may be external to the field unit enclosure, and connected via a power connector in the field unit. The power source may power feed a power supply, which supplies the DC (and/or AC) voltages required by the field units sensors. A sensor may be power fed from the same power source or power supply powering the field unit circuits, or may use a dedicated power source or power supply, which may be internal or external to the field unit enclosure. An actuator may be power fed from the same power source or power supply powering the field unit circuits, or may use a dedicated power source or power supply, which may be internal or external to the field unit enclosure. The same element may serve as both a power source and as a sensor, such as solar cell, a Peltier-effect based device, and motion-based generators.

The power source may be a primary or rechargeable battery, and the field unit may include a battery compartment for holding the battery, and a connector for connecting to a battery charger. Alternatively or in addition, the power source may be based internal electrical power generator, such as a solar or photovoltaic cell, or may use an electromechanical generator (e.g., a dynamo or an alternator) harvesting kinetic energy, such as from the field unit motion. The power source may be the mains AC power, and the power supply may include AC/DC converter. The same element may double as a sensor and as a power source. For example, a solar or photovoltaic cell may be used as a light sensor, simultaneously with serving as a power source, and an electromechanical generator, for example based on harvesting mechanical vibrations energy, may at the same time be used to measure the mechanical vibrations (e.g., frequency or magnitude).

A field unit may be remotely powered, in part or in whole, from a power source via a cable simultaneously carrying another signal. For example, the same cable may carry digital data used for communication (e.g., with a router, a gateway, or another field unit), and the same connector may be used for digital data communication and for receiving power from a power source. The powering via a connection (such as a connector) may use a dedicated cable, where the cable may have power-dedicated wires or conductors, or by using power and data carried over the same wires such as by using FDM or phantom scheme. In the case of using FDM, the field unit may include circuits for

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splitting the power signal and the data signal, and may include filters, transformers or a center-tap transformer. A field unit (or any part thereof) may be used to supply power from a power source to a device connected to it, such as a sensor, an actuator, a router, a gateway or another field unit. Such powering may be via a connection that use a dedicated cable, or by using the same cable and having power-dedicated wires or conductors, or by using power and data carried over the same wires such as by using FDM or phantom scheme. A powering scheme may be based on the PoE standard.

A field unit (sensor, actuator, or sensor / actuator unit) may be integrated, partially or in whole, with the router or gateway. A router, a gateway, a sensor, an actuator, or a field unit may be integrated, in whole or in part, in an electrically powered home, commercial, or industrial appliance. The home appliance may be major or small appliance, and its main function may be food storage or preparation, cleaning (such as clothes cleaning), or temperature control (environmental, food or water) such as heating or cooling. Examples of appliances are water heaters, HVAC systems, air conditioner, heaters, washing machines, clothes dryers, vacuum cleaner, microwave oven, electric mixers, stoves, ovens, refrigerators, freezers, food processors, dishwashers, food blenders, beverage makers such as coffeemakers and iced-tea makers, answering machines, telephone sets, home cinema systems, HiFi systems, CD and DVD players, induction cookers, electric furnaces, trash compactors, and dehumidifiers. The field unit may consist of, or be integrated with, a battery-operated portable electronic device such as a notebook / laptop computer, a media player (e.g., MP3 based or video player), a cellular phone, a Personal Digital Assistant (PDA), an image processing device (e.g., a digital camera or a video recorder), and / or any other handheld computing devices, or a combination of any of these devices. Alternatively or in addition, a router, a gateway, a sensor, an actuator, or a field unit may be integrated, in whole or in part, in furniture or clothes.

In one example, a sensor, an actuator, one or more field units, or the router may be integrated with, or may be part of, an outlet or a plug-in module. The outlet may be telephone, LAN (such as Structured Wiring based on Category 5, 6 or 7 wiring), AC power or CATV outlet. The field unit or the router may communicate over the in-wall wiring connected to the outlet, such as telephone, AC power, LAN or CATV wiring. The outlet associated sensor, actuator, one or more field units, or router may be powered from a power signal carried over the in-wall wiring, and may communicate using the in-wall wiring as a network medium.

The router (or gateway) may include a communication port and a modem (or transceiver) for connecting to the control server via the Internet. The router may include one or more communication

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ports, each associated with a modem (or transceiver), for communicating with field units in the building (or vehicle). A routing core may be connected to all modems (or transceivers) for routing the digital data therebetween.

In one aspect, a control server may be used as part of system implementing a control loop. The system may include one or multiple field units in a building or in a vehicle. One or more networks in the building (or vehicle) may be used for the communication between two or more field units, and for allowing the field units to communicate with a router (which may include some, or whole of, gateway functionalities) in the building (or vehicle). Each of the networks may be a wireless or wired network, and may be a control network, a home network, a PAN, a WPAN, a LAN, a WLAN, or a WAN. The router (or gateway) may communicate with a data units (such as PC) over a network in the building (or vehicle). The router (or the gateway) may serve as an intermediary device in a control loop, and may communicate with the control server over the Internet via an ISP using a network which may be wireless or wired network, which may be a PAN, a WPAN, a LAN, a WLAN, a WAN, or a cellular network.

The system may implement a control loop, which may be arranged to control one or more physical phenomena, such as regulating the phenomena to or at a setpoint (target value) or any other reference value. One or more field units may transmit sensor (or sensors) data to a controller via one or more networks. The controller functionality may receive the sensors data, may condition or process the received sensors data, and according to a control logic determines the actuator (or actuators) commands. The actuators commands may be sent via one or more networks to the target actuators in the field units. The setpoint may be fixed, set by a user, or may be time dependent. The setpoint may be dependent upon an additional sensor that is responsive to another phenomenon distinct from the controlled phenomenon, and the additional sensor is part of, or is coupled to, the system.

The controller may implement open loop (such as feed-forward control). Alternatively or in addition, a closed loop may be implemented, which may be based on proportional-only, PI, Bistable, hysteretic, PID, bang-bang, or fuzzy control based on fuzzy logic. The controller may use sequential control, may be a PLC, or may include PLC functionalities. The controller functionalities may be implemented, in part or in full, in the control server, in the router, in a computer in the building (or vehicle), or divided in any combination thereof.

The system operation or the control logic may involve randomness, and may be based on a random number generated by a random number generator. The random number generator may be

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based on a physical process (such as thermal noise, shot noise, nuclear decaying radiation, photoelectric effect or other quantum phenomena), or on an algorithm for generating pseudo-random numbers, and may be integrated (in part or entirely) as part of one or more of the field units, the router or gateway, or in the control server.

In one aspect, one of the sensors is an image sensor, for capturing an image (still or video). The controller responds to characteristics or events extracted by image processing of the captured image or video. For example, the image processing may be face detection, face recognition, gesture recognition, compression or de-compression, or motion sensing. The image processing functionality may be in the field unit, in the router (or gateway), in the control server, in a computer in the building (or vehicle), or any combination thereof. In another aspect, one of the sensors may be a microphone for capturing a human voice. The controller responds to characteristics or events extracted by voice processing of the captured audio. The voice processing functionality may include compression or de-compression, and may be in the field unit, in the router (or gateway), in the control server, in a computer in the building (or vehicle), or any combination thereof.

Any element capable of measuring or responding to a physical phenomenon may be used as a sensor. An appropriate sensor may be adapted for a specific physical phenomenon, such as a sensor responsive to temperature, humidity, pressure, audio, vibration, light, motion, sound, proximity, flow rate, electrical voltage, and electrical current.

A sensor may be an analog sensor having an analog signal output such as analog voltage or current, or may have continuously variable impedance. Alternatively on in addition, a sensor may have a digital signal output. A sensor may serve as a detector, notifying only the presence of a phenomenon, such as by a switch, and may use a fixed or settable threshold level. A sensor may measure time-dependent or space-dependent parameters of a phenomenon. A sensor may measure time-dependencies or a phenomenon such as the rate of change, time-integrated or time-average, duty-cycle, frequency or time period between events. A sensor may be a passive sensor, or an active sensor requiring an external source of excitation. The sensor may be semiconductor-based, and may be based on MEMS technology.

A sensor may measure the amount of a property or of a physical quantity or the magnitude relating to a physical phenomenon, body or substance. Alternatively or in addition, a sensor may be used to measure the time derivative thereof, such as the rate of change of the amount, the quantity or the magnitude. In the case of space related quantity or magnitude, a sensor may measure the linear

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density, surface density, or volume density, relating to the amount of property per volume. Alternatively or in addition, a sensor may measure the flux (or flow) of a property through a cross-section or surface boundary, the flux density, or the current. In the case of a scalar field, a sensor may measure the quantity gradient. A sensor may measure the amount of property per unit mass or per mole of substance. A single sensor may be used to measure two or more phenomena.

The sensor may be thermoelectric sensor, for measuring, sensing or detecting the temperature (or the temperature gradient) of an object, which may be solid, liquid or gas. Such sensor may be a thermistor (either PTC or NTC), a thermocouple, a quartz thermometer, or an RTD. The sensor may be based on a Geiger counter for detecting and measuring radioactivity or any other nuclear radiation. Light, photons, or other optical phenomena may be measured or detected by a photosensor or photodetector, used for measuring the intensity of visible or invisible light (such as infrared, ultraviolet, X-ray or gamma rays). A photosensor may be based on the photoelectric or the photovoltaic effect, such as a photodiode, a phototransistor, solar cell or a photomultiplier tube. A photosensor may be a photoresistor based on photoconductivity, or a CCD where a charge is affected by the light. The sensor may be an electrochemical sensor used to measure, sense or detect a matter structure, properties, composition, and reactions, such as pH meters, gas detector, or gas sensor. Using semiconductors, oxidation, catalytic, infrared or other sensing or detection mechanisms, gas detector may be used to detect the presence of a gas (or gases) such as hydrogen, oxygen or CO. The sensor may be a smoke detector for detecting smoke or fire, typically by an optical detection (photoelectric) or by a physical process (ionization).

The sensor may be a physiological sensor for measuring, sensing or detecting parameters of a live body, such as animal or human body. Such a sensor may involve measuring of body electrical signals such as an EEG or ECG sensor, a gas saturation sensor such as oxygen saturation sensor, mechanical or physical parameter sensors such as a blood pressure meter. A sensor (or sensors) may be external to the sensed body, implanted inside the body, or may be wearable. The sensor may be an electracoustic sensor for measuring, sensing or detecting sound, such as a microphone. Typically microphones are based on converting audible or inaudible (or both) incident sound to an electrical signal by measuring the vibration of a diaphragm or a ribbon. The microphone may be a condenser microphone, an electret microphone, a dynamic microphone, a ribbon microphone, a carbon microphone, or a piezoelectric microphone.

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A sensor may be an image sensor for providing digital camera functionality, allowing an image (either as still images or as a video) to be captured, stored, manipulated and displayed. The image capturing hardware integrated with the sensor unit may contain a photographic lens (through a lens opening) focusing the required image onto a photosensitive image sensor array disposed approximately at an image focal point plane of the optical lens, for capturing the image and producing electronic image information representing the image. The image sensor may be based on Charge-Coupled Devices (CCD) or Complementary Metal–Oxide–Semiconductor (CMOS). The image may be converted into a digital format by an image sensor AFE (Analog Front End) and an image processor, commonly including an analog to digital (A/D) converter coupled to the image sensor for generating a digital data representation of the image. The unit may contain a video compressor, coupled between the analog to digital (A/D) converter and the transmitter for compressing the digital data video before transmission to the communication medium. The compressor may be used for lossy or non-lossy compression of the image information, for reducing the memory size and reducing the data rate required for the transmission over the communication medium. The compression may be based on a standard compression algorithm such as JPEG (Joint Photographic Experts Group) and MPEG (Moving Picture Experts Group), ITU-T H.261, ITU-T H.263, ITU-T H.264, or ITU-T CCIR 601.

The digital data video signal carrying a digital data video according to a digital video format, and a transmitter coupled between the port and the image processor for transmitting the digital data video signal to the communication medium. The digital video format may be based on one out of: TIFF (Tagged Image File Format), RAW format, AVI (Audio Video Interleaved), DV, MOV, WMV, MP4, DCF (Design Rule for Camera Format), ITU-T H.261, ITU-T H.263, ITU-T H.264, ITU-T CCIR 601, ASF, Exif (Exchangeable Image File Format), and DPOF (Digital Print Order Format) standards.

A sensor may be an electrical sensor used to measure electrical quantities or electrical properties. The electrical sensor may be conductively connected to the measured element. Alternatively or in addition, the electrical sensor may use non-conductive or non-contact coupling to the measured element, such as measuring a phenomenon associated with the measured quantity or property. The electric sensor may be a current sensor or an ampmeter (a.k.a. ampermeter) for measuring DC or AC (or any other waveform) electric current passing through a conductor or wire. The current sensor may be connected such that part or entire of the measured electric current may be

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passing through the ampermeter, such as a galvanometer or a hot-wire ampermeter. An ampermeter may be a current clamp or current probe, and may use the 'Hall effect' or a current transformer concept for non-contact or non-conductive current measurement. The electrical sensor may be a voltmeter for measuring the DC or AC (or any other waveform) voltage, or any potential difference between two points. The voltmeter may be based on the current passing a resistor using the Ohm's law, may be based on a potentiometer, or may be based on a bridge circuit.

A sensor may be a wattmeter measuring the magnitude of the active AC or DC power (or the supply rate of electrical energy). The wattmeter may be a bolometer, used for measuring the power of incident electromagnetic radiation via the heating of a material with a temperature-dependent electrical resistance. A sensor may be an electricity AC (single or multi-phase) or DC type meter (or electrical energy meter), that measures the amount of electrical energy consumed by a load. The electricity meter may be based on a wattmeter which accumulate or average the readings, may be based on induction, or may be based on multiplying measured voltage and current.

An electrical sensor may be an ohmmeter for measuring the electrical resistance (or conductance), and may be a megohmmeter or a microohmeter. The ohmmeter may use the Ohm's law to derive the resistance from voltage and current measurements, or may use a bridge such as a Wheatstone bridge. A sensor may be a capacitance meter for measuring capacitance. A sensor may be an inductance meter for measuring inductance. A sensor may be an impedance meter for measuring an impedance of a device or a circuit. A sensor may be an LCR meter, used to measure inductance (L), capacitance (C), and resistance (R). A meter may use sourcing a DC or an AC voltage, and use the ratio of the measured voltage and current (and their phase difference) through the tested device according to Ohm's law to calculate the resistance, the capacitance, the inductance, or the impedance (R=V/I). Alternatively or in addition, a meter may use a bridge circuit (such as Wheatstone bridge), where variable calibrated elements are adjusted to detect a null. The measurement may be using DC, using a single frequency or over a range of frequencies.

The sensor may be a Time-Domain Reflectometer (TDR) used to characterize and locate faults in transmission-lines such as conductive or metallic lines, based on checking the reflection of a transmitted short rise time pulse. Similarly, an optical TDR may be used to test optical fiber cables.

A sensor may be a scalar or a vector magnetometer for measuring an H or B magnetic fields. The magnetometer may be based on a Hall effect sensor, magneto-diode, magneto-transistor, AMR magnetometer, GMR magnetometer, magnetic tunnel junction magnetometer, magneto-optical

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sensor, Lorentz force based MEMS sensor, Electron Tunneling based MEMS sensor, MEMS compass, Nuclear precession magnetic field sensor (a.k.a. Nuclear Magnetic Resonance - NMR), optically pumped magnetic field sensor, fluxgate magnetometer, search coil magnetic field sensor, or Superconducting Quantum Interference Device (SQUID) magnetometer.

A sensor may be a strain gauge, used to measure the strain, or any other deformation, of an object. The sensor may be based on deforming a metallic foil, semiconductor strain gauge (such as piezoresistors), measuring the strain along an optical fiber, capacitive strain gauge, and vibrating or resonating of a tensioned wire. A sensor may be a tactile sensor, being sensitive to force or pressure, or being sensitive to a touch by an object, typically a human touch. A tactile sensor may be based on a conductive rubber, a lead zirconate titanate (PZT) material, a polyvinylidene fluoride (PVDF) material, a metallic capacitive element, or any combination thereof. A tactile sensor may be a tactile switch, which may be based on the human body conductance, using measurement of conductance or capacitance.

A sensor may be a piezoelectric sensor, where the piezoelectric effect is used to measure pressure, acceleration, strain or force, and may use transverse, longitudinal, or shear effect mode. A thin membrane may be used to transfer and measure pressure, while mass may be used for acceleration measurement. A piezoelectric sensor element material may be a piezoelectric ceramics (such as PZT ceramic) or a single crystal material. A single crystal material may be gallium phosphate, quartz, tourmaline, or Lead Magnesium Niobate-Lead Titanate (PMN-PT).

A sensor may be a motion sensor, and may include one or more accelerometers, which measures the absolute acceleration or the acceleration relative to freefall. The accelerometer may be piezoelectric, piezoresistive, capacitive, MEMS or electromechanical switch accelerometer, measuring the magnitude and the direction the device acceleration in a single-axis, 2-axis or 3-axis (omnidirectional). Alternatively or in addition, the motion sensor may be based on electrical tilt and vibration switch or any other electromechanical switch.

A sensor may be a force sensor, a load cell, or a force gauge (a.k.a. force gage), used to measure a force magnitude and / or direction, and may be based on a spring extension, a strain gauge deformation, a piezoelectric effect, or a vibrating wire. A sensor may be a driving or passive dynamometer, used to measure torque or any moment of force.

A sensor may be a pressure sensor (a.k.a. pressure transducer or pressure transmitter / sender) for measuring a pressure of gases or liquids, and for indirectly measuring other parameters such as

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fluid/gas flow, speed, water-level, and altitude. A pressure sensor may be a pressure switch. A pressure sensor may be an absolute pressure sensor, a gauge pressure sensor, a vacuum pressure sensor, a differential pressure sensor, or a sealed pressure sensor. The changes in pressure relative to altitude may be used for an altimeter, and the Venturi effect may be used to measure flow by a pressure sensor. Similarly, the depth of a submerged body or the fluid level on contents in a tank may be measured by a pressure sensor.

A pressure sensor may be of a force collector type, where a force collector (such a diaphragm, piston, bourdon tube, or bellows) is used to measure strain (or deflection) due to applied force (pressure) over an area. Such sensor may be a based on the piezoelectric effect (a piezoresistive strain gauge), may be of a capacitive or of an electromagnetic type. A pressure sensor may be based on a potentiometer, or may be based on using the changes in resonant frequency or the thermal conductivity of a gas, or may use the changes in the flow of charged gas particles (ions).

A sensor may be a position sensor for measuring linear or angular position (or motion). A position sensor may be an absolute position sensor, or may be a displacement (relative or incremental) sensor, measuring a relative position, and may be an electromechanical sensor. A position sensor may be mechanically attached to the measured object, or alternatively may use a non-contact measurement.

A position sensor may be an angular position sensor, for measuring involving an angular position (or the rotation or motion) of a shaft, an axle, or a disk. Absolute angular position sensor output indicates the current position (angle) of the shaft, while incremental or displacement sensor provides information about the change, the angular speed or the motion of the shaft. An angular position sensor may be of optical type, using reflective or interruption schemes, or may be of magnetic type, such as based on variable-reluctance (VR), Eddy-current killed oscillator (ECKO), Wiegand sensing, or Hall-effect sensing, or may be based on a rotary potentiometer. An angular position sensor may be transformer based such as a RVDT, a resolver or a synchro. An angular position sensor may be based on an absolute or incremental rotary encoder, and may be a mechanical or optical rotary encoder, using binary or gray encoding schemes.

A sensor may be an angular rate sensor, used to measure the angular rate, or the rotation speed, of a shaft, an axle or a disc, and may be electromechanical (such as centrifugal switch), MEMS based, Laser based (such as Ring Laser Gyroscope - RLG), or a gyroscope (such as fiber-optic gyro) based. Some gyroscopes use the measurement of the Coriolis acceleration to determine the angular rate. An

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angular rate sensor may be a tachometer, which may be based on measuring the centrifugal force, or based on optical, electric, or magnetic sensing a slotted disk.

A position sensor may be a linear position sensor, for measuring a linear displacement or position typically in a straight line, and may use a transformer principle such as such as LVDT, or may be based on a resistive element such as linear potentiometer. A linear position sensor may be an incremental or absolute linear encoder, and may employ optical, magnetic, capacitive, inductive, or eddy-current principles.

A sensor may be a mechanical or electrical motion detector (or an occupancy sensor), for discrete (on/off) or magnitude-based motion detection. A motion detector may be based on sound (acoustic sensors), opacity (optical and infrared sensors and video image processors), geomagnetism (magnetic sensors, magnetometers), reflection of transmitted energy (infrared laser radar, ultrasonic sensors, and microwave radar sensors), electromagnetic induction (inductive-loop detectors), or vibration (triboelectric, seismic, and inertia-switch sensors). Acoustic sensors may use electric effect, inductive coupling, capacitive coupling, triboelectric effect, piezoelectric effect, fiber optic transmission, or radar intrusion sensing. An occupancy sensor is typically a motion detector that may be integrated with hardware or software-based timing device.

A motion sensor may be a mechanically-actuated switch or trigger, or may use passive or active electronic sensors, such as passive infrared sensors, ultrasonic sensors, microwave sensor or tomographic detector. Alternatively or in addition, motion can be electronically identified using infrared (PIR) or laser optical detection or acoustical detection, or may use a combination of the technologies disclosed herein.

A sensor may be a humidity sensor, such as a hygrometer or a humidistat, and may respond to an absolute, relative, or specific humidity. The measurement may be based on optically detecting condensation, or may be based on changing the capacitance, resistance, or thermal conductivity of materials subjected to the measured humidity.

A sensor may be a clinometer for measuring angle (such as pitch or roll) of an object, typically with respect to a plane such as the earth ground plane. A clinometer may be based on an accelerometer, a pendulum, or on a gas bubble in liquid, or may be a tilt switch such as a mercury tilt switch for detecting inclination or declination with respect to a determined tilt angle.

A sensor may be a gas or liquid flow sensor, for measuring the volumetric or mass flow rate via a defined area or a surface. A liquid flow sensor typically involves measuring the flow in a pipe

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or in an open conduit. A flow measurement may be based on a mechanical flow meter, such as a turbine flow meter, a Woltmann meter, a single jet meter, or a paddle wheel meter. Pressure-based meters may be based on measuring a pressure or a pressure differential based on Bernoulli's principle, such as a Venturi meter. The sensor may be an optical flow meter or be based on the Doppler-effect.

A flow sensor may be an air flow sensor, for measuring the air or gas flow, such as through a surface (e.g., through a tube) or a volume, by actually measuring the air volume passing, or by measuring the actual speed or air flow. In some cases, a pressure, typically differential pressure, may be measured as an indicator for the air flow measurements. An anemometer is an air flow sensor primarily for measuring wind speed, and may be cup anemometer, a windmill anemometer, hot-wire anemometer such as CCA (Constant-Current Anemometer), CVA (Constant-Voltage Anemometer) and CTA (Constant-Temperature Anemometer). Sonic anemometers use ultrasonic sound waves to measure wind velocity. Air flow may be measured by a pressure anemometer that may be a plate or tube class.

A sensor may be a gyroscope, for measuring orientation in space, such as the conventional mechanical type, a MEMS gyroscope, a piezoelectric gyroscope, a FOG, or a VSG type. A sensor may be a nanosensor, a solid-state, or an ultrasonic based sensor. A sensor may be an eddy-current sensor, where the measurement may be based on producing and / or measuring eddy-currents. Sensor may be a proximity sensor, such as metal detector. A sensor may be a bulk or surface acoustic sensor, or may be an atmospheric sensor.

In one example, multiple sensors may be used arranged as a sensor array (such as linear sensor array), for improving the sensitivity, accuracy, resolution, and other parameters of the sensed phenomenon. The sensor array may be directional, and better measure the parameters of the impinging signal to the array, such as the number, magnitudes, frequencies, Direction-Of-Arrival (DOA), distances, and speeds of the signals. The processing of the entire sensor array outputs, such as to obtain a single measurement or a single parameter, may be performed by a dedicated processor, which may be part of the sensor array assembly, may be performed in the processor of the field unit, may be performed by the processor in the router, may be performed as part of the controller functionality (e.g., in the control server), or any combination thereof. The same component may serve both as a sensor and as actuator, such as during different times, and may be associated with the same or different phenomenon. A sensor operation may be based on an external or integral mechanism for

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generating a stimulus or an excitation to generate influence or create a phenomenon. The mechanism may be controlled as an actuator or as part of the sensor.

Any element designed for or capable of directly or indirectly affecting, changing, producing, or creating a physical phenomenon under an electric signal control may be used as an actuator. An appropriate actuator may be adapted for a specific physical phenomenon, such as an actuator responsive to temperature, humidity, pressure, audio, vibration, light, motion, sound, proximity, flow rate, electrical voltage, and electrical current. Typically a sensor may be used to measure a phenomenon affected by an actuator.

An actuator may be an analog actuator having an analog signal input such as analog voltage or current, or may have continuously variable impedance. Alternatively on in addition, an actuator may have a digital signal input. An actuator may affect time-dependent or space-dependent parameters of a phenomenon. An actuator may affect time-dependencies or a phenomenon such as the rate of change, time-integrated or time-average, duty-cycle, frequency or time period between events. The actuator may be semiconductor-based, and may be based on MEMS technology.

An actuator may affect the amount of a property or of a physical quantity or the magnitude relating to a physical phenomenon, body or substance. Alternatively or in addition, an actuator may be used to affect the time derivative thereof, such as the rate of change of the amount, the quantity or the magnitude. In the case of space related quantity or magnitude, an actuator may affect the linear density, surface density, or volume density, relating to the amount of property per volume. Alternatively or in addition, an actuator may affect the flux (or flow) of a property through a cross-section or surface boundary, the flux density, or the current. In the case of a scalar field, an actuator may affect the quantity gradient. An actuator may affect the amount of property per unit mass or per mole of substance. A single actuator may be used to measure two or more phenomena.

An actuator may be a light source used to emit light by converting electrical energy into light, and where the luminous intensity may be fixed or may be controlled, commonly for illumination or indication purposes. An actuator may be used to activate or control the light emitted by a light source, being based on converting electrical energy or another energy to a light. The light emitted may be a visible light, or invisible light such as infrared, ultraviolet, X-ray or gamma rays. A shade, reflector, enclosing globe, housing, lens, and other accessories may be used, typically as part of a light fixture, in order to control the illumination intensity, shape or direction. Electrical sources of illumination commonly use a gas, a plasma (such as in arc and fluorescent lamps), an electrical filament, or Solid-

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State Lighting (SSL), where semiconductors are used. An SSL may be a Light-Emitting Diode (LED), an Organic LED (OLED), Polymer LED (PLED), or a laser diode.

A light source may consists of, or comprises, a lamp which may be an arc lamp, a fluorescent lamp, a gas-discharge lamp (such as a fluorescent lamp), or an incandescent light (such as a halogen lamp). An arc lamp is the general term for a class of lamps that produce light by an electric arc voltaic arc. Such a lamp consists of two electrodes, first made from carbon but typically made today of tungsten, which are separated by a noble gas.

A motion actuator may be a rotary actuator that produces a rotary motion or torque, commonly to a shaft or axle. The motion produced by a rotary motion actuator may be either continuous rotation, such as in common electric motors, or movement to a fixed angular position as for servos and stepper motors. A motion actuator may be a linear actuator that creates motion in a straight line. A linear actuator may be based on an intrinsically rotary actuator, by converting from a rotary motion created by a rotary actuator, using a screw, a wheel and axle, or a cam. A screw actuator may be a leadscrew, a screw jack, a ball screw or roller screw. A wheel-and-axle actuator operates on the principle of the wheel and axle, and may be hoist, winch, rack and pinion, chain drive, belt drive, rigid chain, or rigid belt actuator. Similarly, a rotary actuator may be based on an intrinsically linear actuator, by converting from a linear motion to a rotary motion, using the above or other mechanisms. Motion actuators may include a wide variety of mechanical elements and/or prime movers to change the nature of the motion such as provided by the actuating / transducing elements, such as levers, ramps, screws, cams, crankshafts, gears, pulleys, constant-velocity joints, or ratchets. A motion actuator may be part of a servomotor system.

A motion actuator may be a pneumatic actuator that converts compressed air into rotary or linear motion, and may comprises a piston, a cylinder, valves or ports. Motion actuators are commonly controlled by an input pressure to a control valve, and may be based on moving a piston in a cylinder. A motion actuator may a hydraulic actuator using a pressure of the liquid in a hydraulic cylinder to provide force or motion. A hydraulic actuator may be a hydraulic pump, such as a vane pump, a gear pump, or a piston pump. A motion actuator may be an electric actuator where electrical energy may be converted into motion, such as an electric motor. A motion actuator may be a vacuum actuator producing a motion based on vacuum pressure.

An electric motor may be a DC motor, which may be a brushed, brushless, or uncommutated type. An electric motor may be a stepper motor, and may be a Permanent Magnet (PM) motor, a

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Variable reluctance (VR) motor, or a hybrid synchronous stepper.An electric motor may be an AC motor, which may be an induction motor, a synchronous motor, or an eddy current motors. An AC motor may be a two-phase AC servo motor, a three-phase AC synchronous motor, or a single-phase AC induction motor, such as a split-phase motor, a capacitor start motor, or a Permanent-Split Capacitor (PSC) motor. Alternatively or in addition, an electric motor may be an electrostatic motor, and may be MEMS based.

A rotary actuator may be a fluid power actuator, and a linear actuator may be a linear hydraulic actuator or a pneumatic actuator. A linear actuator may be a piezoelectric actuator, based on the piezoelectric effect, may be a wax motor, or may be a linear electrical motor, which may be a DC brush, a DC brushless, a stepper, or an induction motor type. A linear actuator may be a telescoping linear actuator. A linear actuator may be a linear electric motor, such as a linear induction motor (LIM), or a Linear Synchronous Motor (LSM).

A motion actuator may be a linear or rotary piezoelectric motor based on acoustic or ultrasonic vibrations. A piezoelectric motor may use piezoelectric ceramics such as Inchworm or PiezoWalk motors, may use Surface Acoustic Waves (SAW) to generate the linear or the rotary motion, or may be a Squiggle motor. Alternatively or in addition, an electric motor may be an ultrasonic motor. A linear actuator may be a micro- or nanometer comb-drive capacitive actuator. Alternatively or in addition, a motion actuator may be a Dielectric or Ionic based Electroactive Polymers (EAPs) actuator. A motion actuator may also be a solenoid, thermal bimorph, or a piezoelectric unimorph actuator.

An actuator may be a pump, typically used to move (or compress) fluids or liquids, gasses, or slurries, commonly by pressure or suction actions, and the activating mechanism is often reciprocating or rotary. A pump may be a direct lift, impulse, displacement, valveless, velocity, centrifugal, vacuum pump, or gravity pump. A pump may be a positive displacement pump, such as a rotary-type positive displacement type such as internal gear, screw, shuttle block, flexible vane or sliding vane, circumferential piston, helical twisted roots or liquid ring vacuum pumps, a reciprocating-type positive displacement type, such as piston or diaphragm pumps, and a linear-type positive displacement type, such as rope pumps and chain pumps, a rotary lobe pump, a progressive cavity pump, a rotary gear pump, a piston pump, a diaphragm pump, a screw pump, a gear pump, a hydraulic pump, and a vane pump. A rotary positive displacement pumps may be a gear pump, a screw pump,

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or a rotary vane pumps. Reciprocating positive displacement pumps may be plunger pumps type, diaphragm pumps type, diaphragm valves type, or radial piston pumps type.

A pump may be an impulse pump such as hydraulic ram pumps type, pulser pumps type, or airlift pumps type. A pump may be a rotodynamic pump such as a velocity pump or a centrifugal pump. A centrifugal pump may be a radial flow pump type, an axial flow pump type, or a mixed flow pump.

An actuator may be an electrochemical or chemical actuator, used to produce, change, or otherwise affect a matter structure, properties, composition, process, or reactions, such as oxidation/reduction or an electrolysis process.

An actuator may be a sounder which converts electrical energy to sound waves transmitted through the air, an elastic solid material, or a liquid, usually by means of a vibrating or moving ribbon or diaphragm. The sound may be audible or inaudible (or both), and may be omnidirectional, unidirectional, bidirectional, or provide other directionality or polar patterns. A sounder may be an electromagnetic loudspeaker, a piezoelectric speaker, an electrostatic loudspeaker (ESL), a ribbon or planar magnetic loudspeaker, or a bending wave loudspeaker.

A sounder may an electromechanical type, such as an electric bell, a buzzer (or beeper), a chime, a whistle or a ringer and may be either electromechanical or ceramic-based piezoelectric sounders. The sounder may emit a single or multiple tones, and can be in continuous or intermittent operation.

The system may use the sounder to play digital audio content, either stored in, or received by, the sounder, the actuator unit, the router, the control server, or any combination thereof. The audio content stored may be either pre-recorded or using a synthesizer. Few digital audio files may be stored, selected by the control logic. Alternatively or in addition, the source of the digital audio may a microphone serving as a sensor. In another example, the system uses the sounder for simulating the voice of a human being or generates music. The music produced can emulate the sounds of a conventional acoustical music instrument, such as a piano, tuba, harp, violin, flute, guitar and so forth. A talking human voice may be played by the sounder, either pre-recorded or using human voice synthesizer, and the sound may be a syllable, a word, a phrase, a sentence, a short story or a long story, and can be based on speech synthesis or pre-recorded, using male or female voice.

A human speech may be produced using a hardware, software (or both) speech synthesizer, which may be Text-To-Speech (TTS) based. The speech synthesizer may be a concatenative type,

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using unit selection, diphone synthesis, or domain-specific synthesis. Alternatively or in addition, the speech synthesizer may be a formant type, and may be based on articulatory synthesis or hidden Markov models (HMM) based.

An actuator may be used to generate an electric or magnetic field, and may be an electromagnetic coil or an electromagnet.

An actuator may be a display for presentation of visual data or information, commonly on a screen, and may consist of an array (e.g., matrix) of light emitters or light reflectors, and may present text, graphics, image or video. A display may be a monochrome, gray-scale, or color type, and may be a video display. The display may be a projector (commonly by using multiple reflectors), or alternatively (or in addition) have the screen integrated. A projector may be based on an Eidophor, Liquid Crystal on Silicon (LCoS or LCOS), or LCD, or may use Digital Light Processing (DLP™) technology, and may be MEMS based or be a virtual retinal display. A video display may support Standard-Definition (SD) or High-Definition (HD) standards, and may support 3D. The display may present the information as scrolling, static, bold or flashing. The display may be an analog display, such as having NTSC, PAL or SECAM formats. Similarly, analog RGB, VGA (Video Graphics Array), SVGA (Super Video Graphics Array), SCART or S-video interface, or may be a digital display, such as having IEEE1394 interface (a.k.a. FireWire™), may be used. Other digital interfaces that can be used are USB, SDI (Serial Digital Interface), HDMI (High-Definition Multimedia Interface), DVI (Digital Visual Interface), UDI (Unified Display Interface), DisplayPort, Digital Component Video or DVB (Digital Video Broadcast) interface. Various user controls may include an on/off switch, a reset button and others. Other exemplary controls involve display associated settings such as contrast, brightness and zoom.

A display may be a Cathode-Ray Tube (CRT) display, or a Liquid Crystal Display (LCD) display. The LCD display may be passive (such as CSTN or DSTN based) or active matrix, and may be Thin Film Transistor (TFT) or LED-backlit LCD display. A display may be a Field Emission Display (FED), Electroluminescent Display (ELD), Vacuum Fluorescent Display (VFD), or may be an Organic Light-Emitting Diode (OLED) display, based on passive-matrix (PMOLED) or active-matrix OLEDs (AMOLED).

A display may be based on an Electronic Paper Display (EPD), and be based on Gyricon technology, Electro-Wetting Display (EWD), or Electrofluidic display technology. A display may be

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a laser video display or a laser video projector, and may be based on a Vertical-External-Cavity Surface-Emitting-Laser (VECSEL) or a Vertical-Cavity Surface-Emitting Laser (VCSEL).

A display may be a segment display, such as a numerical or an alphanumerical display that can show only digits or alphanumeric characters, words, characters, arrows, symbols, ASCII and non-ASCII characters. Examples are Seven-segment display (digits only), Fourteen-segment display, and Sixteen-segment display, and a dot matrix display.

An actuator may be a thermoelectric actuator such as a cooler or a heater for changing the temperature of a solid, liquid or gas object, and may use conduction, convection, thermal radiation, or by the transfer of energy by phase changes. A heater may be a radiator using radiative heating, a convector using convection, or a forced convection heater. A thermoelectric actuator may be a heating or cooling heat pump, and may be electrically powered, compression–based cooler using an electric motor to drive a refrigeration cycle. A thermoelectric actuator may be an electric heater, converting electrical energy into heat, using resistance, or a dielectric heater. A thermoelectric actuator may be a solid-state active heat pump device based on the Peltier effect. A thermoelectric actuator may be an air cooler, using a compressor-based refrigeration cycle of a heat pump. An electric heater may be an induction heater.

An actuator unit may include a signal generator serving as an actuator for providing an electrical signal (such as a voltage or current), or may be coupled between the processor and the actuator for controlling the actuator. A signal generator an analog or digital signal generator, and may be based on software (or firmware) or may be a separated circuit or component. A signal may generate repeating or non-repeating electronic signals, and may include a digital to analog converter (DAC) to produce an analog output. Common waveforms are a sine wave, a saw-tooth, a step (pulse), a square, and a triangular waveforms. The generator may include some sort of modulation functionality such as Amplitude Modulation (AM), Frequency Modulation (FM), or Phase Modulation (PM). A signal generator may be an Arbitrary Waveform Generators (AWGs) or a logic signal generator.

An actuator unit may include an electrical switch (or multiple switches) coupled between the processor and the actuator for activating the actuator. Two or more switches may be used, connected in series or in parallel. The switch may be integrated with the actuator (if separated from the actuator unit), with the actuator unit, or any combination thereof. In the above examples, a controller can affect the actuator (or load) activation by sending the actuator unit a message to activate the actuator by powering it, or to deactivate the actuator operation by breaking the current floe thereto, or shifting the

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actuator between states. A switch is typically designed to open (breaking, interrupting), close (making), or change one or more electric circuits under some type of external control, and may be an electromechanical device with one or more sets of electrical contacts having two or more states. The switch may be a 'normally open', 'normally closed' type, or a changeover switch, that may be either a 'make-before-break' or 'break-before-make' type. The switch contacts may have one or more poles and one or more throws, such as Single-Pole-Single–Throw (SPST), Single-Pole-Double–Throw (SPDT), Double-Pole-Double–Throw (DPDT), Double-Pole-Single–Throw (DPST), and Single-Pole-Changeover (SPCO). The switch may be an electrically operated switch such as an electromagnetic relay, which may be a non-latching or a latching type. The relay may be a reed relay, or a solid-state or semiconductor based relay, such as a Solid State Relay (SSR). A switch may be implemented using an electrical circuit, such as an open collector or open drain based circuit, a thyristor, a TRIAC or an opto-isolator.

The image processing may include video enhancement such as video denoising, image stabilization, unsharp masking, and super-resolution. The image processing may include a Video Content Analysis (VCA), such as Video Motion Detection (VMD), video tracking, and egomotion estimation, as well as identification, behavior analysis and other forms of situation awareness, dynamic masking, motion detection, object detection, face recognition, automatic number plate recognition, tamper detection, video tracking, and pattern recognition.

The image processing may be used for non-verbal human control of the system, such as by hand posture or gesture recognition. The recognized hand posture or gesture may be used as input by the control logic in the controller, and thus enables humans to interface with the machine in ways sometimes described as Man-Machine Interfaces (MMI) or Human-Machine Interfaces (HMI) and interact naturally without any mechanical devices, and thus to impact the system operation and the actuators commands and operation. An image-based recognition may use a single camera or 3-D camera. A gesture recognition may be based on 3-D information of key elements of the body parts or may be 2-D appearance-based. A 3-D model approach can use volumetric or skeletal models, or a combination of the two.

A redundancy may be used in order to improve the accuracy, reliability, or availability. The redundancy may be implemented where two or more components may be used for the same functionality. The components may be similar, substantially or fully the same, identical, different, substantially different, or distinct from each other, or any combination thereof. The redundant

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components may be concurrently operated, allowing for improved robustness and allowing for overcoming a single point of failure (SPOF), or alternatively one or more of the components serves as a backup. The redundancy may be a standby redundancy, which may be 'Cold Standby' and 'Hot Standby'. In the case three redundant components are used, Triple Modular Redundancy (TMR) may be used, and Quadruple Modular Redundancy (QMR) may be used in the case of four components. A 1:N Redundancy logic may be used for three or more components.

A sensor redundancy involves using two or more sensors sensing the same phenomenon. One of the two may be used, or all the sensors may be used together such as for averaging measurements for improved accuracy. Two or more data path may be available in the system between the system elements, where one of the may be only used, or alternatively all the data paths may be used together such as for improving the available bandwidth, throughput and delay.

In one example two or more sensor may be used for sensing the same (or substantially the same) phenomenon. The two (or more) sensors may be part of, associated with, or connected to the same field unit. Alternatively or in addition, each sensor may be connected to, or be part of, a distinct field unit. Similarly, two or more actuators may be used for generating or affecting the same (or substantially the same) phenomenon. The two (or more) actuators may be part of, associated with, or connected to the same field unit. Alternatively or in addition, each actuator may be connected to, or be part of, a distinct field unit.

The field units and the router may be located in the same building (or vehicle), in different buildings (or vehicles) or external (adjacent or remote) to the building (or vehicle) or the user premises. A field unit may communicate (such as send sensor info or receive actuator commands) with the router (or gateway) or the control server using the same or different WANs used by the router, and may be associated by the controller and its control logic by communication with the router or the control server.

The memory may be a random-accessed or a sequential-accessed memory, and may be location-based, randomly-accessed, and can be written multiple times. The memory may be volatile and based on semiconductor storage medium, such as: RAM, SRAM, DRAM, TTRAM and Z-RAM. The memory may be non-volatile and based on semiconductor storage medium, such as ROM, PROM, EPROM or EEROM, and may be Flash-based, such as SSD drive or USB 'Thumb' drive. The memory may be based on non-volatile magnetic storage medium, such as HDD. The memory may be based on an optical storage medium that is recordable and removable, and may include an optical

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disk drive. The storage medium may be: CD-RW, DVD-RW, DVD+RW, DVD-RAM BD-RE, CD-ROM, BD-ROM or DVD-ROM. The memory form factor may be an IC, a PCB on which one or more ICs are mounted, or a box-shaped enclosure.

The communication may be based on a PAN, a LAN or a WAN communication link, may use private or public networks, and may be packet-based or circuit-switched. The first bus or the second bus (or both) may each be based on Ethernet and may be substantially compliant with IEEE 802.3 standard, and be based on one out of: 100BaseT/TX, 1000BaseT/TX, 10 gigabit Ethernet substantially (or in full) according to IEEE Std 802.3ae-2002as standard, 40 Gigabit Ethernet, and 100 Gigabit Ethernet substantially according to IEEE P802.3ba standard. The first bus or the second bus (or both) may each be based on a multi-drop, a daisy-chain topology, or a point-to-point connection, use half-duplex or full-duplex, and may employs a master / slave scheme. The first bus or the second bus (or both) may each be a wired-based, point-to-point, and bit-serial bus, where a timing, clocking or strobing signal is carried over dedicated wires, or using a self-clocking scheme. Each of the buses (or both) may use a fiber-optic cable as the bus medium, and the adapter may comprise a fiber-optic connector for connecting to the fiber-optic cable.

The communication between two devices in the building (or vehicle), external to the building (or vehicle), or between a device in the building (or vehicle) to a device external to the building (or vehicle), such as the communication between field units, between routers, between home devices, between field unit and a router, between field unit and a server, or between a router and a server, may use multiple communication routes over the same or different networks, which may be used separately as redundant data paths or cooperatively such as aggregated communication links. A device in the system may include multiple network interfaces for communicating the multiple data routes or for communication over the multiple networks. A network interface may include a transceiver or modem and a communication port for coupling to the network, such as a connector for connecting to a wired or conductive network and an antenna for coupling to a wireless network. A physical, software, or logical (or a combination thereof) based interface selector in the device receives the packet to be sent and under a dedicated or general computer or processor control directs it to one or more of the network interfaces, to be sent over the multiple networks or data routes. A packet to be sent may be received by the interface selector, and when the interfaces that are available for transmission of the received packet are identified, and then an interface to be used (or multiple

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interfaces) may be selected out of the available interfaces, and the packet may be directed and sent to the selected interface for being transmitted over the associated network.

The network interfaces may be (in part or in whole) similar, identical or different from each other. The networks or the data paths may be similar, identical or different from each other, and may use different, similar or same medium, protocol, or connections. The networks may be wired (or otherwise conductive) and may be using coaxial cable, twisted-pair, power lines (powerlines) or telephone lines, or wireless (or otherwise using non-conductive propagation), using over the air or guided Radio Frequency (RF), light or sound propagation, and the network interfaces may include antennas, fiber-optics connectors, light emitters or light detectors, or speakers and microphones, or any combination thereof.

The networks or the data paths may be similar, identical or different geographical scale or coverage types and data rates, such as NFCs, PANs, LANs, MANs, or WANs, or any combination thereof. The networks or the data paths may be similar, identical or different types of modulation, such as Amplitude Modulation (AM), a Frequency Modulation (FM), or a Phase Modulation (PM), or any combination thereof. The networks or the data paths may be similar, identical or different types of duplexing such half- or full-duplex, or any combination thereof. The networks or the data paths may be based on similar, identical or different types of switching such as circuit-switched or packet-switched, or any combination thereof. The networks or the data paths may have similar, identical or different ownership or operation, such as private or public networks, or any combination thereof.

Two or more network interfaces may communicate over the same network or connected to same network medium simultaneously or at different times, and may use FDM technique, where filters passing different, same, or overlapping frequency bands may be connected between the modems and the respective communication ports. Alternatively or in addition, distinct modulation or coding schemes may be used in order to carry two or more signals over the same medium or over the same frequency band. Two or more network interfaces may share the same network port such as the same antenna or the same connector.

A packet may be sent via one, part of, or all of the available interfaces. A packet may be sent via one of the available interfaces, selected by using a cyclic assigning mechanism, or may otherwise form an aggregated stream such as by using a Time-Division Multiplexing (TDM) scheme. A packet may be sent via randomly selected one of the available interfaces, or using a priority that may be assigned to each network interface. The priorities may be pre-set, fixed or adaptive and changing in

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time. The selection of the interface to be used, or the priorities assigned to the network interfaces, may be based on the available networks attributes or history, such as cost of network usage, quality of the communication via the interface or network, available bandwidth or throughput, communication errors or packets loss, number of hops to destination, last receive packet, or transfer delay time.

The selection of the interface to be used, or the priorities assigned to the network interfaces, may be based on routing tables (fixed or dynamic) associating the network interfaces to the attributes of the packet, such as destination or source address, or may be based on the type of information carried in the packet.

The field units and the router may be located in the same building (or vehicle), in different buildings (or vehicles) or external (adjacent or remote) to the building (or vehicle) or the user premises. A field unit may communicate (such as send sensor info or receive actuator commands) with the router (or gateway) or the control server using the same or different WANs used by the router, and may be associated by the controller and its control logic by communication with the router or the control server.

The system may include computers, routers, and field units including, or connected to, sensors and actuators, in a vehicle, and may be communicating via a router or routers to a server external to the vehicle. The vehicle may communicate with other vehicles, or with the server, via other vehicle or via (or to) a roadside unit or other stationary devices. The vehicle may be designed for use on land, on or in fluids, or be airborne, such as bicycle, car, automobile, motorcycle, train, ship, boat, submarine, airplane, scooter, bus, subway, train, or spacecraft. The sensors may sense a phenomenon in the vehicle or external to the vehicle. The actuators may affect the vehicle speed, direction, or route, or may be affecting the in-vehicle systems or environment. The system may be used for improving safety, traffic management, driver assisting, pricing management, and navigation. The in-vehicle networks may be based on standard or vehicle specific buses, such as CAN or LIN.

Any device in the system, such as a router, a field unit, a home computer, a server, or any other device or computer, may be addressable in any of the system, networks (such as the in-building or in-vehicle network, or any external network such as the the Internet) using a digital address which may be stored in a volatile or non-volatile memory. The same address or different addresses may be used when communicating over the various networks in the system, and the address may be or locally administered addresses universally administered addresses, where the address is uniquely assigned to a device by its manufacturer (such as programmed during manufacturing) or by its installer or user.

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The address may be a permanent and globally unique identification, and may be software-based or hardware-based. The address may be layer 2 address such as MAC address (e.g., MAC-48, EUI-48, or EUI-64), or alternatively (or in addition) may be IP address such as IPv4 or IPv6. The address may be static or dynamic IP address. The address may be assigned by another device in the network via a communication port or interface over the network, and may use DHCP. For example, the control server, the home computer, or the router may assign addresses to the router or to the field units. A device may be associated with, or be identified, by multiple addresses, which may relate to different OSI model layers (such as MAC and IP address), or to be used by different networks, such as multiple addressable network interfaces. The sensors and the actuators in the systems, or their respective connections or ports, may be individually addressable added to the related field unit other addresses, and may serve for source or destination addresses in the system. The sensors or actuators addresses, or the related connections or ports, may be uniquely assigned to during manufacturing, or may be assigned by the associated field unit, or a device communicating with the associated field unit.

In one aspect, a vehicle control system is disclosed such as for commanding an actuator operation according to a control logic, in response to a sensor response associated with a phenomenon, for example for use with one or more in-vehicle networks for communication in a vehicle, and an external network for communicating with an Internet-connected control server via another vehicle or a roadside unit external to the vehicle. The system may comprise a router in the vehicle, connected to the one or more in-vehicle networks and to the external network, and may be operative to pass digital data between the in-vehicle and one or more external networks; a first device in the vehicle that may comprise of, or connectable to, a sensor that responds to the phenomenon, the first device may be operative to transmit a sensor digital data corresponding to the phenomenon to the router over the one or more in-vehicle networks; a second device in the vehicle that may comprise of, or connectable to, an actuator that affects the phenomenon, the second device may be operative to execute actuator commands received from the router over the one or more in-vehicle networks; and an Internet-connected control server external to the vehicle storing the control logic, and communicatively coupled to the router over the Internet via the one or more external networks. The control server may be operative to receive the sensor digital data from the router, may produce actuator commands in response to the received sensor digital data according to the control logic, and may transmit the actuator commands to the second device via the router.

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One of the external networks may be a vehicle-to-vehicle network for communicating with the Internet-connected control server via another vehicle, or may be communicating with a stationary device that may be a roadside unit. The router, the first device, or the second device may be mechanical attached to the vehicle that may be adapted for travelling on land, water, or may be airborne. The vehicle may be a bicycle, a car, a motorcycle, a train, a ship, an aircraft, a boat, a spacecraft, a boat, a submarine, a dirigible, an electric scooter, a subway, a train, a trolleybus, a tram, a sailboat, a yacht, or an airplane. The sensor may be operative to sense a phenomenon in the vehicle, external to the vehicle, or in the surroundings around the vehicle, and the actuator may be operative to affect a phenomenon in the vehicle, external to the vehicle, or in the surroundings around the vehicle. The system may be coupled to monitor or control the Engine Control Unit (ECU), the Transmission Control Unit (TCU), the Anti-Lock Braking System (ABS), or the Body Control Modules (BCM), and may be integrated with or being part of a vehicular communication system used to improved safety, traffic flow control, traffic reporting, traffic management, parking help, cruise control, lane keeping, road sign recognition, surveillance, speed limit warning, restricted entries, pull-over commands, travel information, cooperative adaptive cruise control, cooperative forward collision warning, intersection collision avoidance, approaching emergency vehicle warning, vehicle safety inspection, transit or emergency vehicle signal priority, electronic parking payments, commercial vehicle clearance and safety inspections, in-vehicle signing, rollover warning, probe data collection, highway-rail intersection warning, or electronic toll collection.

One or more of the in-vehicle networks may be according to, or based on, SAE J1962, SAE J1850, SAE J1979, ISO 15765, or ISO 9141 standard, or may be a vehicle bus that may be according to, or based on, Control Area Network (CAN) or Local Interconnect Network (LIN), and may use the vehicle DC power lines as a communication medium. The system may be coupled to or integrated with the vehicle On-Board Diagnostics (OBD) system that may be according to, or based on, OBD-II or EOBD (European On-Board Diagnostics) standards. The router, the first device, or the second device may be coupled to the OBD diagnostics connector, and may be at least in part powered via the OBD diagnostics connector. The router may be operative to communicate to the control server information regarding fuel and air metering, ignition system, misfire, auxiliary emission control, vehicle speed and idle control, transmission, on-board computer, fuel level, relative throttle position, ambient air temperature, accelerator pedal position, air flow rate, fuel type, oxygen level, fuel rail pressure, engine oil temperature, fuel injection timing, engine torque, engine coolant temperature,

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intake air temperature, exhaust gas temperature, fuel pressure, injection pressure, turbocharger pressure, boost pressure, exhaust pressure, exhaust gas temperature, engine run time, NOx sensor, manifold surface temperature, or the Vehicle Identification Number (VIN).

In one aspect, a control system is disclosed, for example for commanding an actuator operation according to a control logic, in response to processing of an image, such as for use with one or more in-building (or in-vehicle) networks for communication in the building (or vehicle), and an external network at least in part external to the building (or vehicle). The system may comprise a router in the building (or vehicle), connected to the one or more in-building (or in-vehicle) networks and to the external network, and may be operative to pass digital data between the in-building (or in-vehicle) and external networks; a first device in the building (or vehicle) comprising an image sensor for capturing still or video image, the first device may be operative to transmit a digital data corresponding to the captured still or video image to the router over the one or more in-building (or in vehicle) network; a second device in the building (or vehicle) comprising an actuator that affects the phenomenon, the second device may be operative to execute actuator commands received from the router over the one or more in-building (or in-vehicle) networks; an Internet-connected control server (referred herein also as 'cloud server' and 'gateway server') external to the building (or vehicle) storing the control logic, and communicatively coupled to the router over the Internet via the external network; and an image processor having an output for processing the captured still or video image; and the control server may be operative to produce actuator commands in response to the image processor output according to the control logic, and may be operative to transmit the actuator commands to the second device via the router, and the image processor may be entirely or in part in the first device, the router, the control server, or any combination thereof.

In one aspect, a control system is disclosed such as for commanding an actuator operation according to a control logic, in response to processing of a voice, for example for use with one or more in-building (or in-vehicle) networks for communication in the building (or vehicle), and an external network at least in part external to the building (or vehicle). The system may comprise a router in the building (or vehicle), connected to the one or more in-building (or in-vehicle) networks and to the external network, and may be operative to pass digital data between the in-building (or in-vehicle) and external networks; a first device in the building (or vehicle) comprising a microphone for sensing voice, the first device may be operative to transmit a digital data corresponding to the sensed voice to the router over the one or more in-building (or in vehicle) network; a second device

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in the building (or vehicle) comprising an actuator that affects the phenomenon, the second device may be operative to execute actuator commands received from the router over the one or more in-building (or in-vehicle) networks; an Internet-connected control server external to the building (or vehicle) storing the control logic, and communicatively coupled to the router over the Internet via the external network; and a voice processor having an output for processing the voice. The control server may be operative to produce actuator commands in response to the voice processor output according to the control logic, and may be operative to transmit the actuator commands to the second device via the router, and the voice processor may be entirely or in part in the first device, the router, the control server, or any combination thereof.

In one aspect, a control system is disclosed, for example for use with, or including, one or more in-building (or in-vehicle) networks for communication in the building (or vehicle), and for example for use with, or including, an external network at least in part external to the building (or vehicle), and may be used for commanding an actuator operation according to a control logic in response to a sensor response associated with a phenomenon. The system may comprise a router in the building (or vehicle), connected to the one or more in-building (or in-vehicle) networks and to the external network, and may be operative to pass digital data between the in-building (or in-vehicle) and external networks; a first device in the building (or vehicle) comprising of, or connectable to, a sensor that responds to the phenomenon, the first device may be operative to transmit a sensor digital data corresponding to the phenomenon to the router over the one or more in-building (or in-vehicle) networks; a second device in the building (or vehicle) comprising of, or connectable to, an actuator that affects the phenomenon, the second device may be operative to execute actuator commands received from the router over the one or more in-building (or in-vehicle) networks; and an Internet-connected control server external to the building (or vehicle) storing the control logic, and communicatively coupled to the router over the Internet via the external network. The control server may be operative to receive the sensor digital data from the router, to produce actuator commands in response to the received sensor digital data according to the control logic, and to transmit the actuator commands to the second device via the router. The router may be a gateway or may comprise one or more gateway functionalities. The phenomenon may be associated with an object, and the object may be gas, air, liquid or solid.

The sensor may provide a digital output, and the sensor output may include an electrical switch, and the electrical switch state may be responsive to the phenomenon magnitude measured versus a

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threshold, which may be set by the actuator. The sensor may provide an analog output, and the first device may comprise an analog to digital converter coupled to the analog output, for converting the sensor output to a digital data. The first device may comprise a signal conditioning circuit coupled to the sensor output, and the signal conditioning circuit may comprise an amplifier, a voltage or current limiter, an attenuator, a delay line or circuit, a level translator, a galvanic isolator, an impedance transformer, a linearization circuit, a calibrator, a passive filter, an active filter, an adaptive filter, an integrator, a deviator, an equalizer, a spectrum analyzer, a compressor or a de-compressor, a coder, a decoder, a modulator, a demodulator, a pattern recognizer, a smoother, a noise remover, an average circuit, or an RMS circuit. The sensor may be operative to sense time-dependent characteristic of the sensed phenomenon, and may be operative to respond to a time-integrated, an average, an RMS (Root Mean Square) value, a frequency, a period, a duty-cycle, a time-integrated, or a time-derivative, of the sensed phenomenon. The first device, the router, or the control server may be operative to calculate or provide a time-dependent characteristic such as time-integrated, an average, an RMS (Root Mean Square) value, a frequency, a period, a duty-cycle, a time-integrated, or a time-derivative, of the sensed phenomenon. The sensor may be operative to sense space-dependent characteristic of the sensed phenomenon, such as to a pattern, a linear density, a surface density, a volume density, a flux density, a current, a direction, a rate of change in a direction, or a flow, of the sensed phenomenon. The first device, the router, or the control server may be operative to calculate or provide a space-dependent characteristic of the sensed phenomenon, such as a pattern, a linear density, a surface density, a volume density, a flux density, a current, a direction, a rate of change in a direction, or a flow, of the sensed phenomenon.

The actuator may affect, create, or change a phenomenon associated with an object, and the object may be gas, air, liquid, or solid. The actuator may be controlled by a digital input, and may be electrical actuator powered by an electrical energy. The actuator may be controlled by an analog input, and the second device may comprise a digital to analog converter coupled to the analog input, for converting a digital data to an actuator input signal. The second device may comprise a signal conditioning circuit coupled to the actuator input, the signal conditioning circuit may comprise an amplifier, a voltage or current limiter, an attenuator, a delay line or circuit, a level translator, a galvanic isolator, an impedance transformer, a linearization circuit, a calibrator, a passive filter, an active filter, an adaptive filter, an integrator, a deviator, an equalizer, a spectrum analyzer, a compressor or a de-compressor, a coder, a decoder, a modulator, a demodulator, a pattern recognizer, a smoother, a noise

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remover, an average circuit, or an RMS circuit. The actuator may be operative to affect time-dependent characteristic such as a time-integrated, an average, an RMS (Root Mean Square) value, a frequency, a period, a duty-cycle, a time-integrated, or a time-derivative, of the sensed phenomenon. The actuator may be operative to affect or change space-dependent characteristic of the phenomenon, such as a pattern, a linear density, a surface density, a volume density, a flux density, a current, a direction, a rate of change in a direction, or a flow, of the sensed phenomenon. The second device, the router, or the control server may be operative to affect a space-dependent characteristic such as a pattern, a linear density, a surface density, a volume density, a flux density, a current, a direction, a rate of change in a direction, or a flow, of the phenomenon.

The system may comprise a third device external to the building (or vehicle) comprising an additional sensor that responds to a distinct or same phenomenon, the third device may be operative to transmit an additional sensor digital data corresponding to the distinct phenomenon to the control server, and the control server may be operative to receive the additional sensor digital data, to produce actuator commands in response to the received additional sensor digital data according to the control logic. The third device may communicate with the control server over the external network, over a network distinct from the external network, or both.

Alternatively or in addition, the system may comprise a fourth device external to the building (or vehicle) comprising an additional actuator that responds to received additional actuator commands, the fourth device may be operative to receive an additional actuator commands from the control server, and the control server may be operative to transmit the additional actuator commands to the fourth device. The fourth device may communicate with the control server over the external network, over a network distinct from the external network, or both.

The control loop may involve randomness, and the system may comprise a random number generator for generating random numbers. The random number generator may be hardware based, and may based on thermal noise, shot noise, nuclear decaying radiation, photoelectric effect, or quantum phenomena. Alternatively or in addition, the random number generator may be software based, and the system may execute an algorithm for generating pseudo-random numbers.

The sensor, the actuator, the first device, the second device, or the router may comprise, or may be integrated with, an outlet or an outlet plug-in module for connecting to in-wall wiring. The outlet may be a telephone, LAN, AC power, or CATV outlet, and the in-wall wiring may be a telephone wire pair, a LAN cable, an AC power cable, or a CATV coaxial cable. The in-wall wiring may be

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carrying a power signal to power part or whole of the sensor, the actuator, the first device, the second device, or the router. The in-wall wiring may serve as the in-building (or in-vehicle) network medium for communication associated with the first device, the second device, or the router.

The system may comprise multiple sensors arranged as a directional sensor array, and the system may be operative to estimate the number, magnitude, frequency, Direction-Of-Arrival (DOA), distance, or speed of the signal impinging the sensor array. The control logic may include processing of the sensor array outputs. A single component may consist of, or may be part of, the sensor and the actuator. The sensor may be a piezoelectric sensor that uses the transverse, longitudinal, or shear effect mode of the piezoelectric effect. Alternatively or in addition, the sensor may be based on ultrasonic-waves propagation, sensing eddy-currents, based on proximity sensor. The sensor may be a bulk or surface acoustic sensor, or may be an atmospheric or an environmental sensor.

The sensor may be a thermoelectric sensor that senses or responds to a temperature or a temperature gradient of an object using conduction, convection, or radiation, and may consist of, or comprise, a Positive Temperature Coefficient (PTC) thermistor, a Negative Temperature Coefficient (NTC) thermistor, a thermocouple, a quartz crystal, or a Resistance Temperature Detector (RTD). A radiation-based sensor may respond to radioactivity, nuclear radiation, alpha particles, beta particles, or gamma rays, and may be based on gas ionization.

The sensor may be a photoelectric sensor that responds to a visible or an invisible light or both, such as infrared, ultraviolet, X-rays, or gamma rays. The photoelectric sensor may be based on the photoelectric or photovoltaic effect, and consists of, or comprises, a semiconductor component such as a photodiode, a phototransistor, or a solar cell. The photoelectric sensor may be based on Charge-Coupled Device (CCD) or a Complementary Metal-Oxide Semiconductor (CMOS) element. The sensor may be a photosensitive image sensor array comprising multiple photoelectric sensors, and may be operative for capturing an image and producing an electronic image information representing the image, and may comprise one or more optical lens for focusing the received light and mechanically oriented to guide the image, and the image sensor may be disposed approximately at an image focal point plane of the one or more optical lens for properly capturing the image. An image processor may be coupled to the image sensor for providing a digital data video signal according to a digital video format, the digital video signal carrying digital data video based on the captured images, and the digital video format may be according to, or based on, one out of: TIFF (Tagged Image File Format), RAW format, AVI, DV, MOV, WMV, MP4, DCF (Design Rule for Camera Format), ITU-

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T H.261, ITU-T H.263, ITU-T H.264, ITU-T CCIR 601, ASF, Exif (Exchangeable Image File Format) and DPOF (Digital Print Order Format) standards. A video compressor may be coupled to the image sensor for lossy or non-lossy compressing of the digital data video, and may be based on a standard compression algorithm such as JPEG (Joint Photographic Experts Group) and MPEG (Moving Picture Experts Group), ITU-T H.261, ITU-T H.263, ITU-T H.264, or ITU-T CCIR 601.

The sensor may be an electrochemical sensor and may respond to an object chemical structure, properties, composition, or reactions. The electrochemical sensor may be a pH meter or may be a gas sensor responding to the presence of radon, hydrogen, oxygen, or Carbon-Monoxide (CO). The electrochemical sensor may be a smoke, a flame, or a fire detector, and may be based on optical detection or on ionization for responding to combustible, flammable, or toxic gas.

The sensor may be a physiological sensor and may respond to parameters associated with a live body, and may be external to the sensed body, implanted inside the sensed body, attached to the sensed body, or wearable on the sensed body. The physiological sensor may be responding to body electrical signals such as an EEG Electroencephalography (EEG) or an Electrocardiography (ECG) sensor, or may be responding to oxygen saturation, gas saturation, or blood pressure.

The sensor may be an electroacoustic sensor and may respond to a sound, such as inaudible or audible audio. The electroacoustic sensor may be a an omnidirectional, unidirectional, or bidirectional microphone, may be based on the sensing the incident sound based motion of a diaphragm or a ribbon, and may consist of, or comprise, a condenser, an electret, a dynamic, a ribbon, a carbon, or a piezoelectric microphone.

The sensor may be an electric sensor and may respond to or measure an electrical characteristics or electrical phenomenon quantity, and may be conductively, non-conductively, or non-contact couplable to the sensed element. The electrical sensor may be responsive to Alternating Current (AC) or Direct Current (DC), and may be an ampermeter and respond to an electrical current passing through a conductor or wire. The ampermeter may consist of, or comprises, a galvanometer, a hot-wire ampermeter, a current clamp, or a current probe. Alternatively or in addition, the electrical sensor may be a voltmeter and may respond to or measure an electrical voltage. The voltmeter may consist of, or comprise, an electrometer, a resistor, a potentiometer, or a bridge circuit. The electrical sensor may be a wattmeter such as an electricity meter that responds to electrical energy, and may measure or respond to active electrical power. The wattmeter may be based on induction, or may be based on multiplying measured voltage and current.

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The electrical sensor may be an impedance meter and may respond to the impedance of the sensed element such as bridge circuit or an ohmmeter, and may be based on supplying a current or a voltage and respectively measuring a voltage or a current. The impedance meter may be a capacitance or an inductance meter (or both) and may respond to the capacitance or the inductance of the sensed element, being measuring in a single frequency or in multiple frequencies. The electrical sensor may be a Time-Domain Reflectometer (TDR) and may respond to the impedance changes along a conductive transmission line, such as an optical TDR that may respond to the changes along an optical transmission line.

The sensor may be a magnetic sensor and may respond to an H or B magnetic field, and may consists of, or may be based on, a Hall effect sensor, a MEMS, a magneto-diode, a magneto-transistor, an AMR magnetometer, a GMR magnetometer, a magnetic tunnel junction magnetometer, a Nuclear precession magnetic field sensor, an optically pumped magnetic field sensor, a fluxgate magnetometer, a search coil magnetic field sensor, or a Superconducting Quantum Interference Device (SQUID) magnetometer. The magnetic sensor may be MEMS based, and may be a Lorentz force based MEMS sensor or may be an Electron Tunneling based MEMS.

The sensor may be a tactile sensor and may respond to a human body touch, and may be based on a conductive rubber, a lead zirconate titanate (PZT) material, a polyvinylidene fluoride (PVDF) material, a metallic capacitive element, or any combination thereof.

The sensor may be a single-axis, 2-axis, or 3-axis motion sensor and may respond to the magnitude, direction, or both, of the sensor motion. The motion sensor may be a piezoelectric, a piezoresistive, a capacitive, or a MEMS accelerometer and may respond to the absolute acceleration or the acceleration relative to freefall. The motion sensor may be an electromechanical switch and may consist of, or comprises, an electrical tilt, or a vibration switch.

The sensor may be a force sensor and may respond to the magnitude, direction, or both, of a force, and may be based on a spring extension, a strain gauge deformation, a piezoelectric effect, or a vibrating wire. The force sensor may be a dynamometer that responds to a torque or to a moment of the force.

The sensor may be a pressure sensor and may respond to a pressure of a gas or a liquid, and may consist of, or comprise, an absolute pressure sensor, a gauge pressure sensor, a vacuum pressure sensor, a differential pressure sensor, or a sealed pressure sensor. The pressure sensor may be based

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on a force collector, the piezoelectric effect, a capacitive sensor, an electromagnetic sensor, or a frequency resonator sensor.

The sensor may be an absolute, a relative displacement, or an incremental position sensor, and may respond to a linear or angular position, or motion, of a sensed element. The position sensor may be an optical type or a magnetic type angular position sensor, and may respond to an angular position or the rotation of a shaft, an axle, or a disk. The angular position sensor may be based on a variable-reluctance (VR), an Eddy-current killed oscillator (ECKO), a Wiegand sensing, or a Hall-effect sensing, and may be transformer based such as an RVDT, a resolver or a synchro. The angular position sensor may be an electromechanical type such as an absolute or an incremental, mechanical or optical, rotary encoder. The angular position sensor may be an angular rate sensor and may respond to the angular rate, or the rotation speed, of a shaft, an axle, or a disc, and may consist of, or comprise, a gyroscope, a tachometer, a centrifugal switch, a Ring Laser Gyroscope (RLG), or a fiber-optic gyro. The position sensor may be a linear position sensor and may respond to a linear displacement or position along a line, and may consist of, or comprise, a transformer, an LVDT, a linear potentiometer, or an incremental or absolute linear encoder.

The sensor may be a motion detector and may respond to a motion of an element, and may based on sound, geomagnetism, reflection of a transmitted energy, electromagnetic induction, or vibration. The motion detector may consist of, or comprise, a mechanically-actuated switch.

The sensor may be a strain gauge and may respond to the deformation of an object, and may be based on a metallic foil, a semiconductor, an optical fiber, vibrating or resonating of a tensioned wire, or a capacitance meter. The sensor may be a hygrometer and may respond to an absolute, relative, or specific humidity, and may be based on optically detecting condensation, or based on changing the capacitance, resistance, or thermal conductivity of materials subjected to the measured humidity. The sensor may be a clinometer and may respond to inclination or declination, and may be based on an accelerometer, a pendulum, a gas bubble in liquid, or a tilt switch.

The sensor may be a flow sensor and may measure the volumetric or mass flow rate via a defined area, volume or surface. The flow sensor may be a liquid flow sensor and may be measuring the liquid flow in a pipe or in an open conduit. The liquid flow sensor may be a mechanical flow meter and may consist of, or comprise, a turbine flow meter, a Woltmann meter, a single jet meter, or a paddle wheel meter. The liquid flow sensor may be a pressure flow meter based on measuring an absolute pressure or a pressure differential. The flow sensor may be a gas or an air flow sensor such

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as anemometer for measuring wind or air speed, and may measure the flow through a surface, a tube, or a volume, and may be based on measuring the air volume passing in a time period. The anemometer may consist of, or comprise, cup anemometer, a windmill anemometer, a pressure anemometer, a hot-wire anemometer, or a sonic anemometer.

The sensor may be a gyroscope for measuring orientation in space, and may consist of, or comprise, a MEMS, a piezoelectric, a FOG, or a VSG gyroscope, and may be based on a conventional mechanical type, a nanosensor, a crystal, or a semiconductor.

The sensor may be an image sensor for capturing an image or video, and the system may include an image processor for recognition of a pattern, and the control logic may be operative to respond to the recognized pattern such as appearance-based analysis of hand posture or gesture recognition. The system may comprise an additional image sensor, and the control logic may be operative to respond to the additional image sensor such as to cooperatively capture a 3-D image and for identifying the gesture recognition from the 3-D image, based on volumetric or skeletal models, or a combination thereof.

The sensor may be an image sensor for capturing still or video image, and the sensor or the system may comprise an image processor having an output for processing the captured image (still or video). The image processor (hardware or software based, or a hardware/software combination) may be encased entirely or in part in the first device, the router, the control server, or any combination thereof, and the control logic may respond to the image processor output. The image sensor may be a digital video sensor for capturing digital video content, and the image processor may be operative for enhancing the video content such as by image stabilization, unsharp masking, or super-resolution, or for Video Content Analysis (VCA) such as Video Motion Detection (VMD), video tracking, egomotion estimation, identification, behavior analysis, situation awareness, dynamic masking, motion detection, object detection, face recognition, automatic number plate recognition, tamper detection, video tracking, or pattern recognition. The image processor may be operative for detecting a location of an element, and may be operative for detecting and counting the number of elements in the captured image, such as a human body parts (such as human face or a human hand) in the captured image. An example of image processing for counting people is described in U.S. Patent No. 7,466,844 to Arun Ramaswamy *et al.*, entitled: "Methods and Apparatus to Count People Appearing in an Image", which is incorporated in its entirety for all purposes as if fully set forth herein.

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The actuator may be a light source that emits visible or non-visible light (infrared, ultraviolet, X-rays, or gamma rays) such as for illumination or indication. The actuator may comprise a shade, a reflector, an enclosing globe, or a lens, for manipulating the emitted light. The light source may be an electric light source for converting electrical energy into light, and may consist of, or comprise, a lamp, such as an incandescent, a fluorescent, or a gas discharge lamp. The electric light source may be based on Solid-State Lighting (SSL) such as a Light Emitting Diode (LED) which may be Organic LED (OLED), a polymer LED (PLED), or a laser diode. The actuator may be a chemical or electrochemical actuator, and may be operative for producing, changing, or affecting a matter structure, properties, composition, process, or reactions, such as producing, changing, or affecting an oxidation/reduction or an electrolysis reaction.

The actuator may be a motion actuator and may cause linear or rotary motion or may comprise a conversion mechanism (may be based on a screw, a wheel and axle, or a cam) for converting to rotary or linear motion. The conversion mechanism may be based on a screw, and the system may include a leadscrew, a screw jack, a ball screw or a roller screw, or may be based on a wheel and axle, and the system may include a hoist, a winch, a rack and pinion, a chain drive, a belt drive, a rigid chain, or a rigid belt. The motion actuator may comprise a lever, a ramp, a screw, a cam, a crankshaft, a gear, a pulley, a constant-velocity joint, or a ratchet, for affecting the produced motion. The motion actuator may be a pneumatic actuator, a hydraulic actuator, or an electrical actuator. The motion actuator may be an electrical motor such as brushed, a brushless, or an uncommutated DC motor, or a Permanent Magnet (PM) motor, a Variable reluctance (VR) motor, or a hybrid synchronous stepper DC motor. The electrical motor may be an induction motor, a synchronous motor, or an eddy current AC motor. The AC motor may be a single-phase AC induction motor, a two-phase AC servo motor, or a three-phase AC synchronous motor, and may be a split-phase motor, a capacitor-start motor, or a Permanent-Split Capacitor (PSC) motor. The electrical motor may be an electrostatic motor, a piezoelectric actuator, or a MEMS-based motor.

The motion actuator may be a linear hydraulic actuator, a linear pneumatic actuator, or a linear electric motor such as linear induction motor (LIM) or a Linear Synchronous Motor (LSM). The motion actuator may be a piezoelectric motor, a Surface Acoustic Wave (SAW) motor, a Squiggle motor, an ultrasonic motor, or a micro- or nanometer comb-drive capacitive actuator, a Dielectric or Ionic based Electroactive Polymers (EAPs) actuator, a solenoid, a thermal bimorph, or a piezoelectric unimorph actuator.

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The actuator may be operative to move, force, or compress liquid, gas or slurry, and may be a compressor or a pump. The pump may be a direct lift, an impulse, a displacement, a valveless, a velocity, a centrifugal, a vacuum, or a gravity pump. The pump may be a positive displacement pump such as a rotary lobe, a progressive cavity, a rotary gear, a piston, a diaphragm, a screw, a gear, a hydraulic, or a vane pump. The positive displacement pump may be a rotary-type positive displacement pump such as an internal gear, a screw, a shuttle block, a flexible vane, a sliding vane, a rotary vane, a circumferential piston, a helical twisted roots, or a liquid ring vacuum pump. The positive displacement pump may be a reciprocating-type positive displacement type such as a piston, a diaphragm, a plunger, a diaphragm valve, or a radial piston pump. The positive displacement pump may be a linear-type positive displacement type such as rope-and-chain pump. The pump may be an impulse pump such as a hydraulic ram, a pulser, or an airlift pump. The pump may be a rotodynamic pump, such as a velocity pump or a centrifugal pump, that may be a radial flow, an axial flow, or a mixed flow pump.

The actuator may be a sounder for converting an electrical energy to emitted audible or inaudible sound waves, emitted as omnidirectional, unidirectional, or bidirectional pattern. The sound may be audible, and the sounder may be an electromagnetic loudspeaker, a piezoelectric speaker, an electrostatic loudspeaker (ESL), a ribbon or a planar magnetic loudspeaker, or a bending wave loudspeaker. The sounder may be electromechanical or ceramic based, and may be operative to emit a single or multiple tones, and may be operative to continuous or intermittent operation. The sounder may be an electric bell, a buzzer (or beeper), a chime, a whistle or a ringer. The sounder may be a loudspeaker, and the system may be operative to play one or more digital audio content files (which may include a pre-recorded audio) stored entirely or in part in the second device, the router, or the control server. The system may comprise a synthesizer for producing the digital audio content. The sensor may be a microphone for capturing the digital audio content to play by the sounder. The control logic or the system may be operative to select one of the digital audio content files, and may be operative for playing the selected file by the sounder. The digital audio content may be music, and may include the sound of an acoustical musical instrument such as a piano, a tuba, a harp, a violin, a flute, or a guitar. The digital audio content may be a male or female human voice saying a syllable, a word, a phrase, a sentence, a short story or a long story. The system may comprise a speech synthesizer (such as a Text-To-Speech (TTS) based) for producing a human speech, being part of the second device, the router, the control server, or any combination thereof. The speech synthesizer may

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be a concatenative type, and may use unit selection, diphone synthesis, or domain-specific synthesis. Alternatively or in addition, the speech synthesizer may be a formant type, articulatory synthesis based, or hidden Markov models (HMM) based.

The actuator may be a monochrome, grayscale or color display for visually presenting information, and may consist of an array of light emitters or light reflectors. Alternatively or in addition, the display may be a visual retinal display or a projector based on an Eidophor, Liquid Crystal on Silicon (LCoS or LCOS), LCD, MEMS or Digital Light Processing (DLP™) technology. The display may be a video display that may support Standard-Definition (SD) or High-Definition (HD) standards, and may be 3D video display. The display may be capable of scrolling, static, bold or flashing the presented information. The display may be an analog display having an analog input interface such as NTSC, PAL or SECAM formats, or analog input interface such as RGB, VGA (Video Graphics Array), SVGA (Super Video Graphics Array), SCART or S-video interface. Alternatively or in addition, the display may be a digital display having a digital input interface such as IEEE1394, FireWire™, USB, SDI (Serial Digital Interface), HDMI (High-Definition Multimedia Interface), DVI (Digital Visual Interface), UDI (Unified Display Interface), DisplayPort, Digital Component Video, or DVB (Digital Video Broadcast) interface. The display may be a Liquid Crystal Display (LCD) display, a Thin Film Transistor (TFT), or an LED-backlit LCD display, and may be based on a passive or an active matrix. The display may be a Cathode-Ray Tube (CRT), a Field Emission Display (FED), Electronic Paper Display (EPD) display (based on Gyricon technology, Electro-Wetting Display (EWD), or Electrofluidic display technology), a laser video display (based on a Vertical-External-Cavity Surface-Emitting-Laser (VECSEL) or a Vertical-Cavity Surface-Emitting Laser (VCSEL)), an Electroluminescent Display (ELD), a Vacuum Fluorescent Display (VFD), or a passive-matrix (PMOLED) or active-matrix OLEDs (AMOLED) Organic Light-Emitting Diode (OLED) display. The display may be a segment display (such as Seven-segment display, a fourteen-segment display, a sixteen-segment display, or a dot matrix display), and may be operative to only display digits, alphanumeric characters, words, characters, arrows, symbols, ASCII, non-ASCII characters, or any combination thereof.

The actuator may be a thermoelectric actuator (such as an electric thermoelectric actuator) and may be a heater or a cooler, and may be operative for affecting or changing the temperature of a solid, a liquid, or a gas object. The thermoelectric actuator may be coupled to the object by conduction, convection, force convention, thermal radiation, or by the transfer of energy by phase changes. The

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thermoelectric actuator may include a heat pump, or may be a cooler based on an electric motor based compressor for driving a refrigeration cycle. The thermoelectric actuator may be an induction heater, may be an electric heater such as a resistance heater or a dielectric heater, or may be solid-state based such as an active heat pump device based on the Peltier effect. The actuator may be an electromagnetic coil or an electromagnet and may be operative for generating magnetic or electric field.

The second device may comprise a signal generator that may signals, and may output or provide repeating or non-repeating electrical signal or signals. The actuator may consist of the signal generator. Alternatively or in addition, the signal generator may be coupled to control the actuator. The signal generator may be an analog signal generator and the analog signal generator output may be an analog voltage or an analog current, such as a sine wave, a sawtooth, a step (pulse), a square, or a triangular waveform. The analog signal generator output may be an Amplitude Modulation (AM), a Frequency Modulation (FM), or a Phase Modulation (PM) signal. The signal generator may be an Arbitrary Waveform Generator (AWG) or a logic signal generator. The signal generator may have a digital output for providing a digital pattern signal.

The system may implement redundancy, and the system may include one or more additional identical, similar, or different sensors that respond to or measure the phenomenon, one or more additional identical, similar, or different actuators that affect the phenomenon, one or more redundant identical to, similar to, or different from each other additional data paths, or any combination thereof. The redundancy may be based on Dual Modula redundancy (DMR), Triple Modular Redundancy (TMR), Quadruple Modular Redundancy (QMR), 1:N Redundancy, 'Cold Standby', or 'Hot Standby'. The system may include an additional sensor that respond to the phenomenon, and the control server may be operative to receive the additional sensor data, and to produce actuator commands in response to the received additional sensor digital data, and the control logic may at one time produce actuator commands in response only to the received additional sensor digital data. The system may include a fifth device in the building (or vehicle) comprising the additional sensor that responds to the same phenomenon, and the fifth device may be operative to transmit the additional sensor digital data to the router over one or more of the in-building (or in-vehicle) networks in the building (or vehicle). The system may include an additional actuator that affects the phenomenon, and the control server may be operative to transmit the additional actuator commands to the additional actuator. The control server may at one time be operative to transmit the additional actuator commands only to the additional actuator. The system may include a seventh device in the building (or vehicle) comprising

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the additional actuator that affects the phenomenon, the seventh device may be operative to receive and execute the additional actuator commands received from the router.

The system may comprise an eighth device that comprises a sensor that responds to a second phenomenon, the eighth device may be operative to transmit a sensor digital data corresponding to the second phenomenon to the router over the one or more in-building (or in-vehicle) networks. The second phenomenon may be of the same, or distinct from, the phenomenon above. The sensor of the eighth device may be of the same type, or distinct type, of the sensor of the first device. The eighth device may communicate with the router over the same, or distinct from, the in-building (or in-vehicle) network used by the first device.

The system may comprise a ninth device that comprises an actuator that affects a third phenomenon; the ninth device may be operative to receive actuator commands corresponding to the third phenomenon from the router over the one or more in-building (or in vehicle) networks. The third phenomenon may be of the same, or distinct from, the phenomenon above. The actuator of the ninth device may be of the same type, or distinct type, of the sensor of the second device. The ninth device may communicate with the router over the same, or distinct from, the in-building (or in-vehicle) network used by the second device.

The router, the first device, or the second device may be connectable to be powered from a power source, and may comprise a power supply couplable to the power source, such as a DC or AC power source. The power source may be external to, or housed with, the enclosure of the router, the first device, or the second device, and may be a primary or rechargeable battery, an electrical power generator for generating power from the phenomenon or from a distinct another phenomenon, an electromechanical generator for harvesting kinetic energy, a solar cell, or a Peltier-effect based thermoelectric device. The AC power source may be mains AC power, and the respective device may comprise an AC power connector connectable to an AC power outlet.

One or more of the in-building (or in-vehicle) networks may be a wired network having a cable carrying a communication signal, and the router, the first device, or the second device may comprise a connector for coupling to the cable. The cable may be connectable to simultaneously carry a DC or AC power signal, and the router, the first device, or the second device may be operative to supply at least in part of the power signal, or at least in part be powered from the power signal. The power signal may be carried over dedicated wires in the cable, and the wires may be distinct from the wires in the cable carrying the communication signal. Alternatively or in addition, the power signal

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and the communication signal may be carried over the same wires in the cable, and the connected device or devices may comprise a power/data splitter arrangement having first, second and third ports, and only the digital data signal may be passed between the first and second ports, and only power signal may be passed between the first and third ports, and the first port may be coupled to the connector. The power and digital data signals may be carried using Frequency Division / Domain Multiplexing (FDM), where the communication signal may be carried over a frequency band above and distinct from the power signal frequency or frequency band, and the power/data splitter may be comprising an HPF between the first and second ports and a LPF between the first and third ports. Alternatively or in addition, the power/data splitter may comprise a transformer and a capacitor connected to the transformer windings. The power and digital data signals may be carried using a phantom scheme, and the power/data splitter may comprise at least two transformers having a center-tap connection. The power and digital data signals may be carried substantially according to IEEE 802.3af-2003 or IEEE 802.3at-2009 standards.

Two devices out of the router, the first device, the second device, and the Internet-connected control server may be operative for communicating with each other using two, three or more multiple data paths. Two, three or more multiple data paths may be in part or fully distinct from each other, or of the same type. The multiple data paths may be using multiple networks, and at least two out of the multiple networks may be similar, identical, or different from each other. At least two out of the multiple networks may use similar, identical, or different network mediums, and at least two out of the multiple networks may use similar, identical, or different protocols, or at least two out of the multiple networks may be coupled to using similar, identical, or different physical layers. In one example, one network may be a wired network and at least one other network may be a wireless network. In one example, one network may be based on conductive medium and at least one other network may be based on non-conductive medium. The conductive medium may be coaxial cable, twisted-pair, powerlines, or telephone lines, and the non-conductive medium may be using RF, light or sound guided or over-the-air propagation. Two networks may be of different types selected from NFC, PAN, LAN, MAN, and WAN. Two networks may use different modulation schemes selected from AM, FM, and PM. Two networks may use different duplexing schemes selected from half-duplex, full-duplex, and unidirectional. Two networks may use different line codes or provide different data-rates. One network may be packet-based and at least one other network may be circuit-switched. One network may be a private network and at least one network may be public.

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The router, the first device, the second device, or the Internet-connected control server, may be operative for communicating with another device in the system over multiple data paths. The router, the first device, the second device, or the Internet-connected control server, may comprise multiple network interfaces each associated with a respective data path and an associated data path network coupled to the network interface, and each of the network interface may comprise a transceiver or a modem for transmitting digital data to, and receiving digital data from, the respective network, and a network port for coupling to the respective network. Two or all out of the network interfaces may be of the same type, two or all out of the network interfaces may use similar, identical, or different transceivers or modems, and two or all out of the network interfaces may use similar, identical, or different network ports or connectors. Each of the connectors may be a coaxial connector, a twisted-pair connector, an AC power connector, a telephone connector.

One or more out of the data path networks may be based on a non-conductive medium, and each of the respective network ports may be non-conductive coupler such as an antenna, a light emitter, a light detector, a microphone, a speaker, and a fiber-optics connector. One or more of the data path networks may be based on a conductive medium, and each of the respective network port may be a connector, and one out of the data path networks may be based on a non-conductive medium, and the respective network port may be a non-conductive coupler. Two or more out of the modems may be of different scales such as NFC, PAN, LAN, MAN or WAN modems, may use different modulation schemes such as AM, FM, or PM, or may use different duplexing schemes such as half-duplex, full-duplex, or unidirectional. One of the modems may be packet-based and at least other one may be circuit-switched. One (or more) network port may be used by two distinct network interfaces, designated as first and second network interfaces, and the first and second network interfaces may be operative to communicate over the same network using FDM, where a first network interface may be using a first frequency band and the second network interface may be using a second frequency band, and the first and second frequency bands may be distinct from each other or in part or in whole overlapping over each other. The first and second network interfaces may comprise a first and a second filters for substantially passing only signals in the first and second frequency bands respectively.

The router, the first device, the second device, or the Internet-connected control server, may be operative to send a packet to another device via the one or more the network interfaces to be carried over the one or more data paths, the packet comprising a source address, a destination address, an

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information type, and an information content. The same packet may be sent via two or more, or via all of the network interfaces. The packet may be sent via one of the network interfaces selected by a fixed, adaptive, or dynamic selection mechanism, which may use, or be based on, distinct number that may be assigned to each of the network interfaces. The selection mechanism may be based on a cyclic selection, the network interfaces may be randomly selected, or the network interfaces may be selected based on the packet source or destination address. Alternatively or in addition, the assigned numbers may represent priority levels associated with the network interfaces, and the network interface having the highest priority level may be selected. The assigned numbers may be based on the associated networks types or attributes or the performance history, or on the current or past associated networks data rates, transfer delays, networks mediums or networks mediums types, qualities, duplexing schemes, line codes using, modulation schemes, switching mechanisms, throughputs, or usages. The one or more network interfaces may be selected based on the packet information type or based on the packet information content

The second device may comprise a first electrically actuated switch coupled for connecting an electric signal to the actuator, and the electrically actuated switch may be actuated in response to the control commands. The electric signal may be a power signal from a power source, and the first electrically actuated switch ('normally open' type, 'normally closed' type, or a changeover type) may be coupled between the power source and the actuator. The first electrically actuated switch may be 'make-before-break' or 'break-before-make' type, may have two or more poles or two or more throws, and the switch contacts may be arranged as a Single-Pole-Double–Throw (SPDT), Double-Pole-Double–Throw (DPDT), Double-Pole-Single–Throw (DPST), or Single-Pole-Changeover (SPCO). The first electrically actuated switch may be a latching or non-latching type, solenoid-based electromagnetic relay such as a reed relay. The relay may be solid-state or semiconductor based, such as Solid State Relay (SSR), or may be based on an electrical circuit such as an open collector transistor, an open drain transistor, a thyristor, a TRIAC or an opto-isolator. The second device may comprise a second electrically actuated switch which may be connected in parallel or in series with the first electrically actuated switch.

The first device, the second device, or the router, may be integrated in part or entirely in an appliance. The appliance primary function may be associated with food storage, handling, or preparation, such as microwave oven, an electric mixer, a stove, an oven, or an induction cooker for heating food, or the appliance may be a refrigerator, a freezer, a food processor, a dishwashers, a food

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blender, a beverage maker, a coffeemaker, or a iced-tea maker. The appliance primary function may be associated with environmental control such as temperature control, and the appliance may consist of, or may be part of, an HVAC system, an air conditioner or a heater. The appliance primary function may be associated with cleaning, such as washing machine or clothes dryer for clothes cleaning, or a vacuum cleaner. The appliance primary function may be associated with water control or water heating. The appliance may be an answering machine, a telephone set, a home cinema system, a HiFi system, a CD or DVD player, an electric furnace, a trash compactor, a smoke detector, a light fixture, or a dehumidifier. The appliance may be a handheld computing device or a battery-operated portable electronic device, such as a notebook or laptop computer, a media player, a cellular phone, a Personal Digital Assistant (PDA), an image processing device, a digital camera, or a video recorder. The integration with the appliance may involve sharing a component such as housing in the same enclosure, sharing the same connector such as sharing a power connector for connecting to a power source, where the integration involves sharing the same connector for being powered from the same power source. The integration with the appliance may involve sharing the same power supply, sharing the same processor, mounting onto the same surface. The first device or the second device may be integrated with the router, such as being enclosed in the router housing.

One or more of the in-building (or in-vehicle) networks may be a Body Area Network (BAN) according to, or based on, IEEE 802.15.6 standard, and the router, the first device, or the second device may comprise a BAN interface that may include a BAN port and a BAN transceiver. The BAN may be a Wireless BAN (WBAN), and the BAN port may be an antenna and the BAN transceiver may be a WBAN modem. Alternatively or in addition, the external network or one or more of the in-building (or in-vehicle) networks may be a Personal Area Network (PAN) according to, or based on, Bluetooth™ or IEEE 802.15.1-2005 standards, and the router, the first device, or the second device may comprise a PAN interface, and the PAN interface may include a PAN port and a PAN transceiver. The PAN may be a Wireless PAN (WPAN), and the PAN port may be an antenna and the PAN transceiver may be a WPAN modem. The WPAN may be a wireless control network according to, or based on, Zigbee™ or Z-Wave™ standards, such as IEEE 802.15.4-2003.

The external network or one or more of the in-building (or in-vehicle) networks may be a Local Area Network (LAN), and the router, the first device, or the second device may comprise a LAN interface, and the LAN interface may include a LAN port and a LAN transceiver. The LAN may be an Ethernet-based wired LAN such as according to, or based on, IEEE 802.3-2008 standard,

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and the LAN port may be a LAN connector and the LAN transceiver may be a LAN modem. The wired LAN medium may be based on twisted-pair copper cables, and the LAN interface may be according to, or based on, 10Base-T, 100Base-T, 100Base-TX, 100Base-T2, 100Base-T4, 1000Base-T, 1000Base-TX, 10GBase-CX4, or 10GBase-T, and the LAN connector may be according to, or based on, RJ-45 type. The wired LAN medium may be based on an optical fiber, and the LAN interface may be according to, or based on, 10Base-FX, 100Base-SX, 100Base-BX, 100Base-LX10, 1000Base-CX, 1000Base-SX, 1000Base-LX, 1000Base-LX10, 1000Base-ZX, 1000Base-BX10, 10GBase-SR, 10GBase-LR, 10GBase-LRM, 10GBase-ER, 10GBase-ZR, or 10GBase-LX4, and the LAN connector may be according to, or based on, a fiber-optic connector. The LAN may be a Wireless LAN (WLAN) such as according to, or base on, IEEE 802.11-2012, and the WLAN port may be a WLAN antenna and the WLAN transceiver may be a WLAN modem. The WLAN may be according to, or base on, IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, IEEE 802.11n, or IEEE 802.11ac.

The external network or one or more of the in-building (or in-vehicle) networks may be a Home Network (HN), and the router, the first device, or the second device may comprise a HN interface that may includes a HN port and a HN transceiver. The HN may be a wired HN using a wired HN medium, and the HN port may be an HN connector, and the HN transceiver may be an HN modem. The wired HN medium may comprise a wiring primarily installed for carrying a service signal, and the wiring may be an in-wall wiring connected to by a wiring connector at a service outlet. The HN may be according to, or based on, a standard such as ITU-T Recommendation G.9954, ITU-T Recommendation G.9960, ITU-T Recommendation G.9970, IEEE 1901-2010, ITU-T Recommendation G.9961, or ITU-T Recommendation G.9972. The wiring may be a telephone wire pair, the service signal may be an analog telephone signal (POTS), the wiring connector may be a telephone connector, and the HN may be according to, or based on, HomePNA standard. Alternatively or in addition, the wiring may be a coaxial cable, the service signal may be a Cable Television (CATV) signal, the wiring connector may be a coaxial connector, and the HN may be according to, or based on, Multimedia over Coax Alliance (MoCA) standard. The wiring may be an AC power wires, the service signal may be an AC power signal, the wiring connector may be an AC power connector, and the HN may be according to, or based on, HomePlug™, HD-PLC, or Universal Powerline Association (UPA) standards.

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The external network or one or more of the in-building (or in-vehicle) networks may be a Wide Area Network (WAN), and the router, the first device, or the second device may comprise a WAN interface that may include a WAN port and a WAN transceiver. The WAN may be a wired WAN, the WAN port may be a WAN connector, and the WAN transceiver may be a WAN modem. The wired WAN medium may comprise a wiring primarily installed for carrying a service signal to or within the building or vehicle. The wired WAN medium may comprise one or more telephone wire pairs primarily designed for carrying an analog telephone signal, and the external network or one or more of the in-building (or in-vehicle) networks may be based on Digital Subscriber Line / Loop (DSL) technology, such as Asymmetric Digital Subscriber Line (ADSL) that may be according to, or based on, ANSI T1.413, ITU-T Recommendation G.992.1, or ITU-T Recommendation G.992.2, or ADSL2 that may be according to, or based on, ITU-T Recommendation G.992.3 or ITU-T Recommendation G.992.4. The external network or one or more of the in-building (or in-vehicle) networks may be based on Digital Subscriber Line / Loop (DSL) technology, such as ADSL2+ that may be according to, or based on, ITU-T Recommendation G.992.5, or Very-high-bit-rate Digital Subscriber Line (VDSL) that may be according to, or based on, ITU-T Recommendation G.993.1 or ITU-T Recommendation G.993.2.

The wired WAN medium may comprise AC power wires primarily designed for carrying an AC power signal to, or within, the building (or vehicle), and the external network or one or more of the in-building (or in-vehicle) networks may be using Broadband over Power Lines (BPL) that may be according to, or based on, IEEE 1675-2008 or IEEE 1901-2010. The wired WAN medium may comprise coaxial cable primarily designed for carrying a CATV to, or within, the building (or vehicle), and the network may be using Data-Over-Cable Service Interface Specification (DOCSIS), that may be according to, or based on, ITU-T Recommendation J.112, ITU-T Recommendation J.122, or ITU-T Recommendation J.222. The wired WAN medium may comprise an optical fiber, and the WAN connector may be a fiber-optic connector, and the WAN may be based on Fiber-To-The-Home (FTTH), Fiber-To-The-Building (FTTB), Fiber-To-The-Premises (FTTP), Fiber-To-The-Curb (FTTC), or Fiber-To-The-Node (FTTN).

The WAN may be a wireless broadband network, and the WAN port may be an antenna and the WAN transceiver may be a wireless modem. The wireless network may be a satellite network, the antenna may be a satellite antenna, and the wireless modem may be a satellite modem. The wireless network may be a WiMAX network such as according to, or based on, IEEE 802.16-2009,

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the antenna may be a WiMAX antenna, and the wireless modem may be a WiMAX modem. The wireless network may be a cellular telephone network, the antenna may be a cellular antenna, and the wireless modem may be a cellular modem. The cellular telephone network may be a Third Generation (3G) network and may use UMTS W-CDMA, UMTS HSPA, UMTS TDD, CDMA2000 1xRTT, CDMA2000 EV-DO, or GSM EDGE-Evolution. The cellular telephone network may be a Fourth Generation (4G) network and may use HSPA+, Mobile WiMAX, LTE, LTE-Advanced, MBWA, or may be based on IEEE 802.20-2008.

The external network or one or more of the in-building (or in-vehicle) networks may be a wireless network and may use a licensed or an unlicensed radio frequency band, such as the Industrial, Scientific and Medical (ISM) radio band. The external network or one or more of the in-building (or in-vehicle) networks may use unlicensed radio frequency band that may be about 60 GHz, may be used for in-room (or in-vehicle) communication, may be based on beamforming, and may supports a data rate of above 7Gb/s, and may be according to, or based on, WiGig™, IEEE 802.11ad, WirelessHD™ or IEEE 80215.3c-2009, may be operative to carry uncompressed video data, and may be according to, or based on, WHDI™. The wireless network may use a white space spectrum that may be an analog television channel consisting of a 6MHz, 7MHz or 8MHz frequency band, and allocated in the 54-806 MHz band. The wireless network may be operative for channel bonding, and may use two or more analog television channels, and may be based on Wireless Regional Area Network (WRAN) standard, and the wireless communication may couple a Base Station (BS) and one or more CPEs, and the wireless communication may be based on OFDMA modulation. The router, the first device, the second device, or the external server may serve as BS. Alternatively or in addition, the router, the first device, the second device, or the external server may serve as a CPE. The wireless communication may be based on geographically-based cognitive radio, and may be according to, or based on, IEEE 802.22 or IEEE 802.11af standards.

The wireless network may be based on, or according to, Near Field Communication (NFC) using passive or active communication mode, may use the 13.56 MHz frequency band, and data rate may be 106Kb/s, 212Kb/s, or 424 Kb/s, and the modulation may be Amplitude-Shift-Keying (ASK). The communication may be based on an NFC standard, and the wireless communication may couple an initiator and a target, and the router may serve as an initiator, and the first or second device may serve as a target or transponder. Alternatively or in addition, the first or second device, or the external server may serve as initiator or as a target or both, and the wireless communication may be according

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to, or based on, ISO/IEC 18092, ECMA-340, ISO/IEC 21481, or ECMA-352. The external network or one or more of the in-building networks may be packet-based or circuit switched network.

The router, the first device, the second device, the router, the control server, the sensor, the actuator, or any combination thereof, or any network interface, port, or any component or sub-system of the devices, may be addressable in a digital data network, such as the in-building (or in-vehicle) network, one or more of the external networks, a WAN, a LAN, a PAN, a BAN, a home network, or the Internet. The devices may be addressable using a digital address stored in a volatile or non-volatile memory in the respective device, uniquely identifying in the digital data network. The digital address may be a MAC layer address such as MAC-48, EUI-48, or EUI-64, or may be a layer 3 address such as static or dynamic IP address such as Pv4 or IPv6 type address. The digital address may be locally administered addresses or a universally administered address that is assigned during manufacturing. The digital address may be autonomously assigned by the addressed device or the address may be assigned by another device (e.g., using DHCP mechanism) via a communication interface over the in-building (or in-vehicle) networks or the external networks. The router, the first device, or the second device may addressable in one or more digital data networks using multiple digital addresses, each associated with a respective network interface.

The control logic may be affecting a control loop for controlling the phenomenon. The control loop may be a closed control loop, and the sensor data may serve as a feedback to command the actuator. The control loop may be a linear closed control loop and may be using proportional, integral, or derivative (or Proportional, Integral, and Derivative (PID)) of the loop deviation from a set-point or a reference. The control loop may use feed-forward, Bistable, fuzzy, Bang-Bang, or Hysteretic control, or may use fuzzy control based on fuzzy logic.

In one aspect, an apparatus for coupling between an internal network extending substantially within an enclosed environment (such as a building or a vehicle) and an external network, coupled to the Internet for communication with a control server and extending substantially outside the enclosed environment is disclosed. The apparatus may be used with (or include) a sensor disposed in the enclosed environment that senses a first condition in the enclosed environment and provides sensor data corresponding to the condition, and may be used with (or include) an actuator disposed to affect the first condition in the enclosed environment in response to received actuator commands. The apparatus may comprise in a single enclosure a first port for coupling to the internal network; a first modem coupled to the first port for communication over the internal network; a second port for

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coupling to the external network; a second modem coupled to the second port for communication over the external network; and a router coupled between the first and second modems so as to pass information between the internal and external networks, the router may be configured to deliver the sensor data from the internal network to the control server over the external networks and to deliver the actuator commands from the control server to the actuator over the internal network.

The apparatus may be a gateway, or may be operative for IP routing, NAT, DHCP, firewalling, parental control, rate converting, fault isolating, protocol converting or translating, or proxy serving. The apparatus may comprise in the single enclosure an additional sensor that senses a second condition that may be distinct from, or same as, the first condition, and may provide additional sensor data corresponding to the second condition, and the apparatus may transmit the additional sensor data to the control server over the external network, or over a network distinct from the external network. The apparatus may comprise in the single enclosure an additional actuator that affects a second condition that may be distinct from, or same as, the first condition, in response to received additional actuator commands, and the apparatus may receive the additional actuator commands from the control server over the external network or over a network distinct from the external network.

The apparatus may produce actuator commands in response to the sensor data according to control logic, and may deliver the actuator commands to the actuator over the internal network. The control logic may affect a control loop for controlling the condition, and the control loop may be a closed linear control loop where the sensor data serve as a feedback to command the actuator based on the loop deviation from a setpoint or a reference value that may be fixed, set by a user, or may be time dependent. The closed control loop may be a proportional-based, an integral-based, a derivative-based, or a Proportional, Integral, and Derivative (PID) based control loop, and the control loop may use feed-forward, Bistable, Bang-Bang, Hysteretic, or fuzzy logic based control. The control loop may be based on, or associated with, randomness based on random numbers; and the apparatus may comprise a random number generator for generating random numbers that may be hardware-based using thermal noise, shot noise, nuclear decaying radiation, photoelectric effect, or quantum phenomena. Alternatively or in addition, the random number generator may be software-based and may execute an algorithm for generating pseudo-random numbers. The apparatus may couple to, or comprise in the single enclosure, an additional sensor responsive to a third condition distinct from the first or second conditions, and the setpoint may be dependent upon the output of the additional sensor.

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The apparatus may communicate over an outlet connected in-wall wiring used by the internal or the external network as a network medium. The single enclosure may consist of, comprise, or may be integrated with, the outlet or a plug-in module pluggable to the outlet. The outlet may be a telephone, LAN, AC power, or CATV outlet, and the in-wall wiring may respectively be a telephone wire pair, a LAN cable, an AC power cable, or a CATV coaxial cable, and the first or second modem may be operative to respectively communicate over the telephone wire pair, the LAN cable, the AC power cable, or the CATV coaxial cable. The in-wall wiring may carry a power signal, and the apparatus may at least in part be powered from the power signal.

The sensor may be a photosensitive image sensor array comprising multiple photoelectric sensors, for capturing an image and producing electronic image information representing the image, and the apparatus may comprise an image processor coupled to the image sensor for providing a digital video data signal that may carry digital video data based on the captured images, and may use a digital video format that may be based on one out of: TIFF (Tagged Image File Format), RAW format, AVI, DV, MOV, WMV, MP4, DCF (Design Rule for Camera Format), ITU-T H.261, ITU-T H.263, ITU-T H.264, ITU-T CCIR 601, ASF, Exif (Exchangeable Image File Format), and DPOF (Digital Print Order Format) standards. The apparatus may comprise an intraframe or interframe compression based video compressor coupled to the image sensor for lossy or non-lossy compressing the digital video data, and the compression may be based on a standard compression algorithm which may be JPEG (Joint Photographic Experts Group) and MPEG (Moving Picture Experts Group), ITU-T H.261, ITU-T H.263, ITU-T H.264, or ITU-T CCIR 601. The apparatus may calculate or provide a space-dependent characteristic of the sensed condition, such as a pattern, a linear density, a surface density, a volume density, a flux density, a current, a direction, a rate of change in a direction, or a flow, of the condition.

The internal or external network may use a cable carrying a communication signal, and the first or second port may consist of a connector for connecting to the cable, and the cable may be connectable to simultaneously carry a DC or AC power signal and the communication signal. The apparatus may supply at least in part of the power signal or may be at least in part powered from the power signal. The power signal may be carried over dedicated wires in the cable, and the wires may distinct from the wires in the cable carrying the communication signal. Alternatively or in addition, the power signal and the communication signal may be concurrently carried over the same wires in the cable, and the apparatus may comprise a power/data splitter arrangement having first, second and

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third ports, where only the communication signal may be passed between the first and second ports, and only the power signal may be passed between the first and third ports, and the first port may be coupled to the connector. The power and communication signals may be carried using Frequency Division Multiplexing (FDM), where the power signal may be carried over a power signal frequency or a power frequency band, and the communication signal may be carried over a frequency band above and distinct from the power signal frequency or the power frequency band, and the power/data splitter may consist or comprise an HPF between the first and second ports and a LPF between the first and third ports. Alternatively or in addition, the power/data splitter may comprise a transformer and a capacitor connected to the transformer windings. Alternatively or in addition, the power and digital data signals may be carried using a phantom scheme and the power/data splitter may comprise at least two transformers having a center-tap connection. Alternatively or in addition, the power and digital data signals may be carried substantially or entirely according to IEEE 802.3af-2003 or IEEE 802.3at-2009 standards.

The second port and the second modem may consist of (or be part of) a first network interface, for use with an additional external network and for communicating with the control server over multiple data paths. The apparatus may comprise a second network interface consisting of a third port for coupling to the additional external network, and a third modem coupled to the third port for communication over the additional external network. The first and second network interfaces may be of a same type, the external network interface may be based on a conductive medium, and the second port may be a connector that may be a coaxial connector, a twisted-pair connector, an AC power connector, or a telephone connector. Alternatively or in addition, the external network may use a non-conductive medium, and the second port may be a non-conductive coupler that may be an antenna, a light emitter, a light detector, a microphone, a speaker, or a fiber-optics connector. Alternatively or in addition, the external network may be based on conductive medium, the second port may be a connector, the additional external network may be based on a non-conductive medium, and the third port may be a non-conductive coupler. The second and third modems may be of different scales such as NFC, PAN, LAN, MAN or WAN modems, the second and third modems may use different modulation schemes such as AM, FM, or PM, the second and third modems may use different duplexing schemes such as half-duplex, full-duplex, or unidirectional, the second modem may be packet-based and the third modem may be circuit-switched, or the second port and the third port may be the same port used by both the first and second network interfaces. Alternatively or in addition,

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the first and second network interfaces may be operative to communicate over a same network using FDM, where the first network interface may be using a first frequency band and the second network interface may be using a second frequency band, that may be overlapping or non-overlapping with the first frequency band.

The first port and the first modem may consist of (or be part of) a third network interface, for use with an additional internal network and for communicating with the control server over multiple data paths. The apparatus may comprise a fourth network interface consisting of a fourth port for coupling to the additional external network, and a fourth modem coupled to the fourth port for communication over the additional internal network. The third and fourth network interfaces may be of a same type, the external network interface may be based on a conductive medium, and the second port may be a connector that may be a coaxial connector, a twisted-pair connector, an AC power connector, or a telephone connector. Alternatively or in addition, the external network may use a non-conductive medium, and the second port may be a non-conductive coupler that may be an antenna, a light emitter, a light detector, a microphone, a speaker, or a fiber-optics connector. Alternatively or in addition, the internal network may be based on conductive medium, the first port may be a connector, the additional internal network may be based on a non-conductive medium, and the fourth port may be a non-conductive coupler. The first and fourth modems may be NFC, PAN, LAN, MAN or WAN modems, the first and fourth modems may use different modulation schemes such as AM, FM, or PM, the first and fourth modems may use different duplexing schemes such as half-duplex, full-duplex, or unidirectional, the first modem may be packet-based and the fourth modem may be circuit-switched, or the first port and the fourth port may be the same port used by both the third and fourth network interfaces. Alternatively or in addition, the third and fourth network interfaces may be operative to communicate over a same network using FDM, where the third network interface may be using a first frequency band and the fourth network interface may be using a second frequency band, that may be overlapping or non-overlapping with the first frequency band.

The apparatus may send a packet to the control server via the network interfaces carried over two distinct data paths. The packet may comprise a source address, a destination address, an information type, and information content. The packet may be sent via the network interfaces (or both) selected by a fixed, adaptive, or dynamic selection mechanism. A distinct number may be assigned to each of the network interfaces, and the selection mechanism may use, or be based on, the assigned numbers that may represent priority levels associated with the network interfaces, and the

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