

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 10,694,384 B2
APPLICATION NO. : 15/941476
DATED : June 23, 2020
INVENTOR(S) : Lee

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Claims

In Column 12, Line 63, please delete "transmit" and insert -- transmit, -- therefor.

Signed and Sealed this
Fifth Day of October, 2021



Drew Hirshfeld
*Performing the Functions and Duties of the
Under Secretary of Commerce for Intellectual Property and
Director of the United States Patent and Trademark Office*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Hyoung-Gon LEE

Appl.No.: 15/941,476

Filing Date: March 30, 2018

U.S. Pat. No. 10,694,384

For: SCHEMES FOR CONNECTING TO
WIRELESS NETWORK

Confirmation No.: 7139

Examiner: William J. GOODCHILD

Group Art Unit: 2433

Commissioner for Patents
Office of Patent Publication
ATTN: Certificate of Correction Branch
P.O. Box 1450
Alexandria, VA 22313-1450

**37 CFR 1.322 & 37 CFR 1.323 REQUEST FOR CERTIFICATE OF CORRECTION FOR
USPTO AND/OR APPLICANT MISTAKE**

A certificate of correction under 35 U.S.C. § 254 is respectfully requested in the above-identified patent.

The exact locations where the errors appear in the patent are as follows

In Column 12, Line 63, please delete “transmit” and insert -- transmit, --
therefor. (AMENDMENT AS FILED APRIL 2, 2020, PAGE 5)

It is believed that the errors identified herein were the fault of the Office, based on the amendment as filed on April 2, 2020. As such, no fee is submitted.

Application No.: 15/941,476
Attorney Docket No.: APA-KR-839496-04-US-CON

Respectfully submitted,

Date: September 10, 2021

By /Dennis M. de Guzman/
Dennis M. de Guzman
Reg. No. 41,702

IP Spring
Customer No. 154241
180 N. LaSalle St, Ste. 3700
Chicago, IL 60601
Tel: 425-505-0910

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 1

PATENT NO. : 10,694,384 B2

APPLICATION NO. : 15/941,476

ISSUE DATE : June 23, 2020

INVENTOR(S) : Lee

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Column 12, Line 63, please delete “transmit” and insert -- transmit, -- therefor.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

IP Spring
180 N. La Salle, Suite 3700
Chicago, IL 60601 United States

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. 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 1.0 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: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Electronic Acknowledgement Receipt

EFS ID:	43727360
Application Number:	15941476
International Application Number:	
Confirmation Number:	7139
Title of Invention:	SCHEMES FOR CONNECTING TO WIRELESS NETWORK
First Named Inventor/Applicant Name:	Hyoung-Gon LEE
Customer Number:	154241
Filer:	Dennis Moises De Guzman/Katherine Gardner
Filer Authorized By:	Dennis Moises De Guzman
Attorney Docket Number:	APA-KR-839496-04-US-CON
Receipt Date:	10-SEP-2021
Filing Date:	30-MAR-2018
Time Stamp:	14:52:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Certificate of Correction	KR-839496-04-US- CON_COC_Coverletter_10SEP2 021.pdf	82506 b7b99e245ebccd06ed7af8512f716c48fb68 7a7e	no	2

Warnings:

Information:					
2	Request for Certificate of Correction	KR-839496-04-US- CON_Request_Certificate_of_C orrection_10SEP2021.pdf	100142 48bcd0ef8cfa0d585ca61c51c85a9ce2d023 e417	no	1
Warnings:					
Information:					
Total Files Size (in bytes):			182648		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/941,476	06/23/2020	10694384	APA-KR-839496-04-US-CON	7139

154241 7590 06/03/2020
IP Spring - AI
180 N. LaSalle St.
Suite 3700
Chicago, IL 60601

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

The Patent Term Adjustment is 245 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

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

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

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

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

Hyoung-Gon LEE, Gapyeong-gun, KOREA, REPUBLIC OF;
Empire Technology Development LLC, Wilmington, DE;

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.

PART B - FEE(S) TRANSMITTAL

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

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

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

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

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

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.

154241 7590 04/22/2020
IP Spring - AI
180 N. LaSalle St.
Suite 3700
Chicago, IL 60601

Certificate of Mailing or Transmission

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

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/941,476	03/30/2018	Hyoung-Gon LEE	APA-KR-839496-04-US-CON	7139

TITLE OF INVENTION: SCHEMES FOR CONNECTING TO WIRELESS NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	07/22/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
GOODCHILD, WILLIAM J	2433	726-004000

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

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

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 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,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

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

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document 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

Empire Technology Development LLC

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

Wilmington, Delaware

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

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

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

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

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 505597

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

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

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

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

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

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

Authorized Signature /Dennis M. de Guzman/

Date May 13, 2020

Typed or printed name Dennis M. de Guzman

Registration No. 41,702

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Hyoung-Gon LEE

Appl. No.: 15/941,476

Filing Date: March 30, 2018

For: SCHEMES FOR CONNECTING TO
WIRELESS NETWORK

Confirmation No.: 7139

Examiner: William J. GOODCHILD

Group Art Unit: 2433

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Applicants recognize that in accordance with M.P.E.P. § 1302.14, the Examiner's reasons for allowance need not set forth all of the details as to why the claims are allowed. In the above referenced application, Applicants do not concede that the Examiner's stated reasons for allowance are the only reasons for which the claims are allowable. In particular, Applicants do not concede that all of the identified features apply with respect to claims 18, 26, and 34. Furthermore, the claims may be patentable for other reasons. In addition, Applicants note that the dependent claims may also be allowable on their own merits, and are allowable on the basis of a sub-combination of the recited features of the dependent claims and their respective base claims.

Respectfully submitted,

/Dennis M. de Guzman/
Dennis M. de Guzman
Attorney for Applicants
Reg. No. 41,702

Dated: May 13, 2020

Customer No. 154241
IP Spring
180 N. LaSalle St, Ste. 3700
Chicago, IL 60601
(347)449-1577

Electronic Patent Application Fee Transmittal				
Application Number:		15941476		
Filing Date:		30-Mar-2018		
Title of Invention:		SCHEMES FOR CONNECTING TO WIRELESS NETWORK		
First Named Inventor/Applicant Name:		Hyoung-Gon LEE		
Filer:		Dennis Moises De Guzman/Katherine Gardner		
Attorney Docket Number:		APA-KR-839496-04-US-CON		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	1000	1000

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1000

Electronic Acknowledgement Receipt

EFS ID:	39421629
Application Number:	15941476
International Application Number:	
Confirmation Number:	7139
Title of Invention:	SCHEMES FOR CONNECTING TO WIRELESS NETWORK
First Named Inventor/Applicant Name:	Hyoung-Gon LEE
Customer Number:	154241
Filer:	Dennis Moises De Guzman/Katherine Gardner
Filer Authorized By:	Dennis Moises De Guzman
Attorney Docket Number:	APA-KR-839496-04-US-CON
Receipt Date:	13-MAY-2020
Filing Date:	30-MAR-2018
Time Stamp:	17:11:49
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 1000
RAM confirmation Number	E20205CH12355285
Deposit Account	
Authorized User	

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

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	KR-839496-04-US- CON_IssueFeeTransmittal_13M AY2020.pdf	98632	no	1
			af993a055a7fd0932a80acb94bf330b11ec0 aaeb		
Warnings:					
Information:					
2	Post Allowance Communication - Incoming	KR-839496-04-US- CON_Comments_on_Statemen ts_on_Allowance_13MAY2020. pdf	92617	no	1
			8539f74476db29a155b4866c2beeec3bd3 49ec9		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30400	no	2
			7996428cae961acdc73567518096085395a 7ee21		
Warnings:					
Information:					
Total Files Size (in bytes):			221649		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

154241 7590 04/22/2020
IP Spring - AI
180 N. LaSalle St.
Suite 3700
Chicago, IL 60601

EXAMINER	
GOODCHILD, WILLIAM J	
ART UNIT	PAPER NUMBER
2433	

DATE MAILED: 04/22/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/941,476	03/30/2018	Hyoung-Gon LEE	APA-KR-839496-04- US-CON	7139

TITLE OF INVENTION: SCHEMES FOR CONNECTING TO WIRELESS NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	07/22/2020

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

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

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

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

PART B - FEE(S) TRANSMITTAL

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

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

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

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

154241 7590 04/22/2020
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180 N. LaSalle St.
Suite 3700
Chicago, IL 60601

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Certificate of Mailing or Transmission

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

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/941,476	03/30/2018	Hyoung-Gon LEE	APA-KR-839496-04-US-CON	7139

TITLE OF INVENTION: SCHEMES FOR CONNECTING TO WIRELESS NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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EXAMINER	ART UNIT	CLASS-SUBCLASS
GOODCHILD, WILLIAM J	2433	726-004000

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

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

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 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,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

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

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(A) NAME OF ASSIGNEE

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

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

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

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

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

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

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

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

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

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

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/941,476	03/30/2018	Hyoung-Gon LEE	APA-KR-839496-04-	7139
154241	7590	04/22/2020	US CON	EXAMINER
IP Spring - AI 180 N. LaSalle St. Suite 3700 Chicago, IL 60601			GOODCHILD, WILLIAM J	
			ART UNIT	PAPER NUMBER
			2433	

DATE MAILED: 04/22/2020

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

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

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

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

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

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

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

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

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

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

Notice of Allowability	Application No. 15/941,476	Applicant(s) LEE, Hyoung-Gon	
	Examiner WILLIAM J GOODCHILD	Art Unit 2433	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 04/02/2020.
☐ 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 18-41. 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 _____.
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/William J. Goodchild/
Primary Examiner, Art Unit 2433

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Response to Arguments

2. Applicant's arguments, see remarks, filed 04/02/2020, with respect to claims have been fully considered and are persuasive. The rejections of claims 18-41 has been withdrawn.

Terminal Disclaimer files 04/02/2020 has been approved.

Allowable Subject Matter

3. Claims 18-41 are allowed.
4. The following is an examiner's statement of reasons for allowance: the combination of limitations including "a fake media access control (MAC) address... transmitting, by the end device to an access point" and "determining, by the end device, that the access point is an authenticated access point".

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

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM J GOODCHILD whose telephone number is (571)270-1589. The examiner can normally be reached on M-F 8am-4:30pm.

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, Jeff Pwu can be reached on 571-272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William J. Goodchild/
Primary Examiner, Art Unit 2433

<i>Notice of References Cited</i>	Application/Control No. 15/941,476		Applicant(s)/Patent Under Reexamination LEE, Hyoung-Gon	
	Examiner WILLIAM J GOODCHILD		Art Unit 2433	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20080052779-A1	02-2008	Sinha; Amit	H04W12/1204	726/22
*	B	US-20070097904-A1	05-2007	Mukherjee; Rajat Pritam	H04L63/101	370/328
*	C	US-20110083165-A1	04-2011	Gopinath; K. N.	H04W48/04	726/4
*	D	US-20040078571-A1	04-2004	Haverinen, Henry	H04L9/0869	713/168
*	E	US-20120076072-A1	03-2012	JALFON; Marc	H04W12/02	370/328
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

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

<i>Search Notes</i> 	Application/Control No. 15/941,476	Applicant(s)/Patent Under Reexamination LEE, Hyoung-Gon
	Examiner WILLIAM J GOODCHILD	Art Unit 2433

CPC - Searched*		
Symbol	Date	Examiner
H04W 12/08 12/06 12/00516 12/00518 text searched	01/26/2020	WJG
H04W 8/26 text searched	01/26/2020	WJG
H04W 48/20 text searched	01/26/2020	WJG
H04W 84/12 text searched	01/26/2020	WJG
H04W 88/08 text searched	01/26/2020	WJG
H04L 63/10 text searched	01/26/2020	WJG

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

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

/William J. Goodchild/ Primary Examiner, Art Unit 2433	
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<i>Search Notes</i> 	Application/Control No. 15/941,476	Applicant(s)/Patent Under Reexamination LEE, Hyoung-Gon
	Examiner WILLIAM J GOODCHILD	Art Unit 2433

Search Notes		
Search Notes	Date	Examiner
H04W 12/08 12/06 12/00516 12/00518 text searched	01/26/2020	WJG
H04W 8/26 text searched	01/26/2020	WJG
H04W 48/20 text searched	01/26/2020	WJG
H04W 84/12 text searched	01/26/2020	WJG
H04W 88/08 text searched	01/26/2020	WJG
H04L 63/10 text searched	01/26/2020	WJG
see IP.com search	01/26/2020	WJG
Inventor search in EAST and PALM	01/26/2020	WJG
see EAST search	01/26/2020	WJG
see updated EAST search	04/08/2020	WJG

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	claims text searched	01/26/2020	WJG
	claims text searched	04/08/2020	WJG

/William J. Goodchild/ Primary Examiner, Art Unit 2433	
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<i>Index of Claims</i> 	Application/Control No. 15/941,476	Applicant(s)/Patent Under Reexamination LEE, Hyoung-Gon
	Examiner WILLIAM J GOODCHILD	Art Unit 2433

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

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant					☐ CPA		☒ T.D.		☐ R.1.47	
CLAIM		DATE								
Final	Original	01/26/2020	04/08/2020							
	1	-								
	2	-								
	3	-								
	4	-								
	5	-								
	6	-								
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	16	-								
	17	-								
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	39	✓	=							
	40	✓	=							
	41	✓	=							

Issue Classification 	Application/Control No. 15/941,476	Applicant(s)/Patent Under Reexamination LEE, Hyung-Gon	
	Examiner WILLIAM J GOODCHILD	Art Unit 2433	

CPC						
Symbol					Type	Version
H04W	/	12	/	08	F	2013-01-01
H04W	/	8	/	26	I	2013-01-01
H04W	/	48	/	20	I	2013-01-01
H04W	/	12	/	06	I	2013-01-01
H04L	/	63	/	10	I	2013-01-01
H04W	/	84	/	12	A	2013-01-01
H04W	/	88	/	08	A	2013-01-01
H04W	/	12	/	00516	A	2019-01-01
H04W	/	12	/	00518	A	2019-01-01

CPC Combination Sets					
Symbol				Type	Set
	/		/		

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	24	
/William J. Goodchild/ Primary Examiner, Art Unit 2433	08 April 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	18	4

<i>Issue Classification</i> 	Application/Control No. 15/941,476	Applicant(s)/Patent Under Reexamination LEE, Hyung-Gon
	Examiner WILLIAM J GOODCHILD	Art Unit 2433

INTERNATIONAL CLASSIFICATION			
CLAIMED			
H04W	/	12	/ 08

NON-CLAIMED			
/	/		

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

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

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	24	
/William J. Goodchild/ Primary Examiner, Art Unit 2433	08 April 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	18	4

Issue Classification 	Application/Control No. 15/941,476	Applicant(s)/Patent Under Reexamination LEE, Hyung-Gon
	Examiner WILLIAM J GOODCHILD	Art Unit 2433

☐ 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	2	19	11	28	20	37						
	2		11	3	20	12	29	21	38						
	3		12	4	21	13	30	22	39						
	4		13	5	22	14	31	23	40						
	5		14	6	23	15	32	24	41						
	6		15	7	24	16	33								
	7		16	8	25	17	34								
	8		17	9	26	18	35								
	9	1	18	10	27	19	36								

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 24	
/William J. Goodchild/ Primary Examiner, Art Unit 2433 (Primary Examiner) _____ (Date) _____		08 April 2020 (Date)	O.G. Print Claim(s) 18 O.G. Print Figure 4



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 www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 7139

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.		
15/941,476	03/30/2018	726	2433	APA-KR-839496-04-US-CON		
RULE						
APPLICANTS Empire Technology Development LLC, Wilmington, DE; INVENTORS Hyoung-Gon LEE, Gapyeong-gun, KOREA, REPUBLIC OF; ** CONTINUING DATA ***** This application is a CON of 14/693,400 04/22/2015 PAT 9961552 which is a CON of 13/885,754 05/16/2013 PAT 9717005 which is a 371 of PCT/US2012/066306 11/21/2012 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 04/25/2018						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /WILLIAM J GOODCHILD/ Acknowledged Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY KOREA, REPUBLIC OF	SHEETS DRAWINGS 6	TOTAL CLAIMS 24	INDEPENDENT CLAIMS 3
ADDRESS IP Spring - AI 180 N. LaSalle St. Suite 3700 Chicago, IL 60601 UNITED STATES						
TITLE SCHEMES FOR CONNECTING TO WIRELESS NETWORK						
FILING FEE RECEIVED 2280	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit		

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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L2	29	((generat\$5 creat\$5) NEAR5 (fake faked) NEAR5 (mac (media ADJ access ADJ control))) AND (end NEAR2 (device phone server client mobile))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/04/08 15:31
L3	10	L1 AND L2	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/04/08 15:31
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S2	20	("7808958", "7185204", "8005458").PN.	US-PGPUB; USPAT; FPRS; EPO; JPO;	OR	ON	2016/10/27 07:53

			DERWENT; IBM_TDB			
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S6	6	"20120076072" "20070097904" "20060150250" "20120064912" "20050059416" "20130301617"	US-PGPUB	OR	ON	2016/10/27 08:18
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S9	1627	S8 AND S7	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/27 15:58

S10	2805	((fake faked faking false) NEAR3 (id MAC))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/27 15:58
S11	272	S8 AND S10	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/27 15:59
S12	244067	(H04L63/08 H04W12/08 H04W8/26 H04W12/06 H04W48/20 H04W84/12 H04W88/08 H04L63/0815 H04L63/10 H04L63/00).CLAS,CCLS,CPC,CPCL.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/29 16:41
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S14	188	S12 AND S13 AND (random rnd)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/29 16:41
S15	74	((((fake faked faking false) NEAR3 (id MAC)) SAME (rnd random))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/29 16:42
S16	14	S12 AND S15	US-PGPUB; USPAT; FPRS; EPO;	OR	ON	2016/10/29 16:42

			JPO; DERWENT; IBM_TDB			
S17	76	("lee, hyoung-gon").IN.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/29 17:14
S18	5	"20040264427" "20070060128" "20120201201" "20120230304" "20130150012"	US-PGPUB	OR	ON	2017/05/19 15:56
S19	6	"20040264427" "20070060128" "20120201201" "20120230304" "20130150012" "20130176897"	US-PGPUB	OR	ON	2017/05/19 15:56
S20	12	"2014081427"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/20 13:20
S21	280129	(726/004 H04L63/08 H04W12/08 H04W8/26 H04W12/06 H04W48/20 H04W84/12 H04W88/08 H04L63/0815 H04L63/10 H04L63/00 H04L4/00).CLAS,CCLS,CPC,CPCL.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 08:36
S22	3346	((fake faked faking false dummy) SAME MAC)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 08:37
S23	852	((fake faked faking false dummy) NEAR5 MAC)	US-PGPUB; USPAT; FPRS; EPO; JPO;	OR	ON	2017/05/22 08:38

			DERWENT; IBM_TDB			
S24	187	S21 AND S23	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 08:38
S25	42	((fake faked faking false dummy) NEAR5 MAC) AND (probe NEAR2 request)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 09:01
S26	31	S21 AND S25	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 09:01
S27	4002	(authenticated SAME access SAME point SAME information)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 12:59
S28	49	(authenticated NEAR5 ((access ADJ point) NEAR2 information))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 13:00
S29	646	(authenticated\$6 NEAR5 ((access ADJ point) NEAR2 information))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:06

S30	6403	(authenticat\$6 NEAR3 ((access ADJ point)))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:07
S31	4520	(authenticat\$6 NEAR2 ((access ADJ point)))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:07
S32	1771	(authenticat\$6 NEAR2 ((access ADJ point))) SAME (information list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:07
S33	700	(authenticat\$6 NEAR2 ((access ADJ point))) SAME server SAME (information list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:13
S34	131	((authenticat\$6 NEAR2 (access ADJ point)) SAME server SAME (MAC NEAR2 address))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:24
S35	82	((authenticat\$6 NEAR2 (access ADJ point)) SAME server SAME (MAC NEAR2 address) SAME (information list))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:57
S36	3360	((authoriz\$7 authenticat\$6) NEAR2 (access ADJ point)) SAME (send\$5 transmit\$5 request\$5))	US-PGPUB; USPAT; FPRS; EPO;	OR	ON	2017/05/22 15:17

			JPO; DERWENT; IBM_TDB			
S37	1327	((authoriz\$7 authenticat\$6) NEAR2 (access ADJ point)) NEAR4 (send\$5 transmit\$5 request\$5))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 15:18
S38	1013	((authoriz\$7 authenticat\$6) NEAR2 (access ADJ point)) NEAR2 (send\$5 transmit\$5 request\$5))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 15:18
S39	117	((authoriz\$7 authenticat\$6) NEAR2 (access ADJ point)) NEAR2 (send\$5 transmit\$5 request\$5) NEAR2 server)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 15:37
S40	292536	(726/004 H04W12/08 H04W8/26 H04W12/06 H04W48/20 H04W84/12 H04W88/08 H04L63/10 H04L63/08 H04W12/08 H04W8/26 H04W12/06 H04L63/0815 H04L63/10 H04L63/00).CLAS,CCLS,CPC,CPCL.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/07 13:11
S41	3049	((fake faked faking false) NEAR3 (id MAC))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/07 13:11
S42	311	S40 AND S41	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/07 13:11

S43	83	((fake faked faking false) SAME (probe ADJ request))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/11/16 13:33
S44	7	((((fake faked faking false) NEAR3 (id! identif\$5)) SAME (probe ADJ request))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/11/16 13:40
S46	28	("20030221006" "20040078571" "20040264427" "20050059416" "20060150250" "20070060128" "20070097904" "20070286143" "20080043686" "20080052779" "20090235077" "20110083165" "20110314147" "20120064912" "20120076072" "20120201201" "20120210395" "20120221955" "20120230304" "20120311328" "20130150012" "20130176897" "20130179943" "20130281056" "20130301617" "7185204" "7808958" "8005458").PN.	US-PGPUB; USPAT	OR	ON	2019/12/30 17:50
S47	254	((generat\$5 creat\$5) SAME (fake faked) SAME (mac (media ADJ access ADJ control)))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 11:15
S48	27	((generat\$5 creat\$5) SAME (fake faked) SAME (mac (media ADJ access ADJ control)) SAME end)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 12:55
S49	53	((generat\$5 creat\$5) SAME (fake faked) SAME (mac (media ADJ access ADJ	US-PGPUB; USPAT; FPRS; EPO;	OR	ON	2020/01/26 13:05

		control))) AND (end NEAR2 (device phone server client mobile))	JPO; DERWENT; IBM_TDB			
S50	29	((generat\$5 creat\$5) NEAR5 (fake faked) NEAR5 (mac (media ADJ access ADJ control))) AND (end NEAR2 (device phone server client mobile))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 13:05
S53	101	("lee, hyoung-gon").IN.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 13:47
S54	243541	(MAC SAME access)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 13:48
S55	10	S53 AND S54	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 13:48
S56	411155	(726/004 H04W12/08 H04W8/26 H04W12/06 H04W48/20 H04W84/12 H04W88/08 H04L63/10 H04L63/08 H04W12/08 H04W8/26 H04W12/06 H04L63/0815 H04L63/10 H04L63/00 726/004 H04W12/08 H04W12/06 H04W12/00 H04W12/00516 H04W12/00518 H04W8/26 H04W48/20 H04W84/12 H04W88/08 H04L63/10 H04L63/08 H04L63/0815 H04L63/10).CLAS,CCLS,CPC,CPCL.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 16:14

S57	29	((generat\$5 creat\$5) NEAR5 (fake faked) NEAR5 (mac (media ADJ access ADJ control))) AND (end NEAR2 (device phone server client mobile))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 16:15
S58	10	S56 AND S57	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 16:15

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L4	4	((((generat\$5 creat\$5) AND (fake faked distinct) AND (mac (media ADJ access ADJ control))) AND (end NEAR2 (device phone server client mobile))).CLM.	USPAT	OR	ON	2020/04/08 15:33
S45	7	((((fake faked faking false) AND (id! identif\$5)) AND (probe ADJ request)).CLM.	US-PGPUB; USPAT	OR	ON	2017/11/16 14:11
S51	0	((((generat\$5 creat\$5) AND (fake faked) AND (mac (media ADJ access ADJ control))) AND (end NEAR2 (device phone server client mobile))).CLM.	USPAT	OR	ON	2020/01/26 13:35
S52	4	((((generat\$5 creat\$5) AND (fake faked distinct) AND (mac (media ADJ access ADJ control))) AND (end NEAR2 (device phone server client mobile))).CLM.	USPAT	OR	ON	2020/01/26 13:36

4/8/2020 3:33:37 PM

C:\Users\wgoodchild\Documents\EAST\Workspaces\15941476.wsp

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

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 15/941,476		Filing Date 03/30/2018		☐ To be Mailed	
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO									
APPLICATION AS FILED - PART I									
		(Column 1)	(Column 2)						
FOR		NUMBER FILED	NUMBER EXTRA		RATE (\$)		FEE (\$)		
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A		N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A	N/A		N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A		N/A				
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 = *		x \$100 =					
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 = *		x \$460 =					
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).							
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.					TOTAL				
APPLICATION AS AMENDED - PART II									
		(Column 1)		(Column 2)	(Column 3)				
AMENDMENT	04/02/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 24	Minus	** 24	= 0	x \$100 =		0	
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	x \$460 =		0	
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE		0	
		(Column 1)		(Column 2)	(Column 3)				
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	*	Minus	**	=	x \$0 =			
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x \$0 =			
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						SLIE			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/Theresa OKON/			
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".									
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.									

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Hyoung-Gon LEE

Appl. No.: 15/941,476

Filing Date: March 30, 2018

For: SCHEMES FOR CONNECTING TO
WIRELESS NETWORK

Confirmation No.: 7139

Examiner: William J. GOODCHILD

Group Art Unit: 2433

RESPONSE TO NON-FINAL OFFICE ACTION

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

Dear Examiner:

In response to the non-final Office Action mailed on January 30, 2020, please amend the above-identified application as follows:

Amendments to the Claims are shown in the listing of claims, which begins on page 2 of this paper.

Remarks begin on page 7 of this paper.

AMENDMENTS TO THE CLAIMS

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

Listing of Claims:

1. – 17. (Canceled)

18. (Previously Presented) A method performed under control of an end device, the method comprising:

generating, by the end device, a fake media access control (MAC) address for the end device;

transmitting, by the end device to an access point, a probe request that includes the fake MAC address;

receiving, by the end device from the access point, a probe response that includes information regarding the access point;

determining, by the end device, that the access point is an authenticated access point based, at least in part, on the information in the probe response being indicative that the access point was connected with the end device previous to when the access point received the probe request transmitted by the end device; and

transmitting, by the end device to the access point determined to be the authenticated access point, a connection request that includes an authentic device identifier for the end device.

19. (Previously Presented) The method of claim 18, wherein the fake MAC address is distinct from an actual original MAC address of a hardware network interface of the end device.

20. (Previously Presented) The method of claim 18, wherein information in the probe request is insufficient to identify the end device, so as to prevent leakage of present location information of the end device to non-authenticated access points.

21. (Previously Presented) The method of claim 18, wherein generating the fake MAC address includes generating the fake MAC address from one or more characters that are selected randomly.

22. (Previously Presented) The method of claim 18, wherein the authentic device identifier for the end device includes an authentic MAC address for a hardware network interface of the end device.

23. (Previously Presented) The method of claim 18, further comprising:
receiving, by the end device from the access point, an approval of the connection request; and
connecting, by the end device, to a wireless local area network provided by the access point.

24. (Currently Amended) The method of ~~claim 18~~ claim 23, wherein the access point includes a Wi-Fi access point, and wherein the wireless local area network includes a Wi-Fi network.

25. (Previously Presented) The method of claim 18, further comprising:
receiving, by the end device, a list of authenticated access points that includes information regarding one or more access points,
wherein determining that the access point is the authenticated access point is further based on determining that the access point is included in the list of authenticated access points.

26. (Currently Amended) A method performed by an end device, the method comprising:
obtaining, by the end device, an authenticated access point list that includes information regarding one or more access points;
generating, by the end device, a media access control (MAC) address for the end device that is distinct from an actual MAC address for a hardware network interface of the end device;
transmitting, by the end device to at least one access point, a probe request that includes the generated MAC address;

receiving, by the end device from the at least one access point in response to the probe request, a probe response that includes information regarding the at least one access point;

determining, by the end device based at least, in part, on the information regarding the at least one access point, that the at least one access point is an authenticated access point,

wherein determining that the at least one access point is the authenticated access point includes determining that the information regarding the at least one access point is included in the authenticated access point list; and

transmitting, by the end device to the at least one access point after determining that the at least one access point is the authenticated access point, a connection request that includes an authentic device identifier for the end device.

27. (Previously Presented) The method of claim 26, wherein information in the probe request is insufficient to identify the end device, so as to prevent leakage of present location information of the end device to non-authenticated access points.

28. (Previously Presented) The method of claim 26, wherein generating the MAC address includes generating the MAC address from one or more characters that are selected randomly.

29. (Currently Amended) The method of claim 26, wherein the information regarding the one or more access points includes at least one of a MAC address of each of the one or more access points, or a service set identifier (SSID) of each of the one or more access points.

30. (Currently Amended) The method of claim 26, wherein determining that the at least one access point is the authenticated access point further includes determining that the at least one access point is the authenticated access point if the end device was previously connected to the at least one ~~authenticated~~ access point.

31. (Previously Presented) The method of claim 26, further comprising:
receiving, by the end device from the at least one access point, an approval of the connection request;

transmitting, by the end device to the at least one access point after receiving the approval of the connection request, an association request;

receiving, by the end device from the at least one access point, an association response to the association request; and

connecting to a communication network via the at least one access point in accordance with the association response.

32. (Previously Presented) The method of claim 31, wherein the at least one access point includes a Wi-Fi access point, and wherein the communication network includes a Wi-Fi network that is accessible through the Wi-Fi access point.

33. (Currently Amended) The method of claim 26, wherein the authentic device identifier ~~[[of]]~~for the end device includes the actual MAC address for the hardware network interface of the end device.

34. (Currently Amended) An end device, comprising:
a hardware network interface associated with an actual media access control (MAC) address;
a processor coupled to the hardware network interface and operable to generate a MAC address for the end device that is distinct from the actual MAC address;
a transmitter coupled to the processor and operable to transmit, to an access point, a probe request that includes the generated MAC address; and
a receiver coupled to the processor and operable to receive, from the access point, a probe response that includes information regarding the access point,
wherein the processor is further operable to determine that the access point is an authenticated access point based, at least in part, on the information regarding the access point being indicative that the access point was connected with the end device previous to when the access point received the probe request transmitted from the transmitter, and
wherein the hardware network interface is operable to connect, in response to determination that the access point is the authenticated access point, the end device to a wireless local area network provided by the access point.

35. (Previously Presented) The end device of claim 34, wherein the access point includes a Wi-Fi access point, and wherein the wireless local area network includes a Wi-Fi network.

36. (Previously Presented) The end device of claim 34, wherein the processor is operable to generate the MAC address from one or more characters that are selected randomly.

37. (Currently Amended) The end device of claim 34, wherein:
the transmitter is further operable to transmit, to the access point in response to the determination that the access point is the authenticated access point, a connection request that includes an authentic device identifier for the end device,
the receiver is further operable to receive, from the access point, an approval of the connection request, and
the hardware network interface is operable to connect the end device to the wireless local area network after the receiver receives the approval of the connection request.

38. (Previously Presented) The end device of claim 37, wherein the authentic device identifier for the end device includes the actual MAC address.

39. (Previously Presented) The end device of claim 34, further comprising a memory coupled to the processor and operable to store a list of authenticated access points that includes the information regarding the access point, wherein the information regarding the access point includes at least one of a MAC address of the access point, or a service set identifier (SSID) of the access point.

40. (Previously Presented) The end device of claim 34, wherein the end device includes one of a cell phone, a personal data assistant (PDA), a personal media player device, a wireless web-watch device, a personal headset device, an application specific device, or a hybrid device.

41. (Previously Presented) The end device of claim 34, wherein information in the probe request is insufficient to identify the end device, so as to prevent leakage of present location information of the end device to non-authenticated access points.

REMARKS

This paper is being filed in response to the Office Action having a mailing date of January 30, 2020. Claims 24, 26, 29, 30, 33, 34, and 37 are amended for typographical and/or for other refinement purposes. No new matter has been added. Claims 1-17 were previously canceled without prejudice. With this filing, claims 18-41 are pending in the application.

Double Patenting Rejections

The Office Action rejected¹ claims 18, 21-30, 33-36, and 38-40 under the ground of nonstatutory double patenting as allegedly being unpatentable over claims 1-17 of U.S. Patent No. 9,717,005.

A Terminal Disclaimer is being filed along with this paper. Hence, it is kindly requested that the double patenting rejection be withdrawn.

In view of the filing of the Terminal Disclaimer, it is believed that all claims are now in condition for allowance, and notice to that effect is kindly requested.

¹ It is noted herein that the Office Action Summary page states that claims “18-41” are rejected. However, the double patenting rejection only sets forth a rejection of claims “18, 21-30, 33-36, and 38-40” and is silent regarding claims 19, 20, 31, 32, 37, and 41. Moreover, no other sections of the Office Action has set forth any grounds for rejecting claims 19, 20, 31, 32, 37, and 41. Hence, the undersigned attorney presumes that claims 19, 20, 31, 32, 37, and 41 were deemed to be allowable.

CONCLUSION

It is respectfully submitted that the present claims are in condition for allowance and a Notice of Allowance is earnestly sought. Attorney Dennis M. de Guzman may be contacted at telephone number (425) 505-0910 at the Examiner's convenience if it would help in the prosecution of this matter.

The Commissioner is hereby authorized to charge to the Deposit Account No. 50-5597 (APA-KR-839496-04-US-CON) any (large entity size) deficiency of fees under 37 CFR 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,

Date: April 2, 2020

By /Dennis M. de Guzman/
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Reg. No. 41,702

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Electronic Acknowledgement Receipt

EFS ID:	39036301
Application Number:	15941476
International Application Number:	
Confirmation Number:	7139
Title of Invention:	SCHEMES FOR CONNECTING TO WIRELESS NETWORK
First Named Inventor/Applicant Name:	Hyoung-Gon LEE
Customer Number:	154241
Filer:	Dennis Moises De Guzman/Katherine Gardner
Filer Authorized By:	Dennis Moises De Guzman
Attorney Docket Number:	APA-KR-839496-04-US-CON
Receipt Date:	02-APR-2020
Filing Date:	30-MAR-2018
Time Stamp:	17:31:51
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		KR-839496-04-US- CON_RNFOA_02APR2020.pdf	103419	yes	8
			a79d879e5e81df294eb9b2876a607c4dd8797205		

Multipart Description/PDF files in .zip description			
Document Description	Start	End	
Amendment/Req. Reconsideration-After Non-Final Reject	1	1	
Claims	2	6	
Applicant Arguments/Remarks Made in an Amendment	7	8	

Warnings:

Information:

Total Files Size (in bytes):	103419
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed		PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce	
Electronic Petition Request	TERMINAL DISCLAIMER TO OBIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT		
Application Number	15941476		
Filing Date	30-Mar-2018		
First Named Inventor	Hyoung-Gon LEE		
Attorney Docket Number	APA-KR-839496-04-US-CON		
Title of Invention	SCHEMES FOR CONNECTING TO WIRELESS NETWORK		
☒ 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	
EMPIRE TECHNOLOGY DEVELOPMENT LLC		100%	
The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s) 9717005 as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns. In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later: - expires for failure to pay a maintenance fee; - is held unenforceable; - is found invalid by a court of competent jurisdiction; - is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321; - has all claims canceled by a reexamination certificate; - is reissued; or - is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer. ☒ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.			

☐ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.	
Applicant claims the following fee status: ☐ Small Entity ☐ Micro Entity ☒ Regular Undiscounted	
I hereby declare that all statements made herein of my own knowledge are true and that all statements 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.	
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES I certify, in accordance with 37 CFR 1.4(d)(4) that I am: ☒ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application Registration Number <u>41702</u> ☐ A sole inventor ☐ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application ☐ A joint inventor; all of whom are signing this request	
Signature	/Dennis M. de Guzman/
Name	Dennis M. de Guzman

*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.

Electronic Patent Application Fee Transmittal

Application Number:	15941476			
Filing Date:	30-Mar-2018			
Title of Invention:	SCHEMES FOR CONNECTING TO WIRELESS NETWORK			
First Named Inventor/Applicant Name:	Hyoung-Gon LEE			
Filer:	Dennis Moises De Guzman/Katherine Gardner			
Attorney Docket Number:	APA-KR-839496-04-US-CON			
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	1814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				160

Doc Code: DISQ.E.FILE

Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 15941476

Filing Date: 30-Mar-2018

Applicant/Patent under Reexamination: LEE

Electronic Terminal Disclaimer filed on April 2, 2020

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

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

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt

EFS ID:	39036241
Application Number:	15941476
International Application Number:	
Confirmation Number:	7139
Title of Invention:	SCHEMES FOR CONNECTING TO WIRELESS NETWORK
First Named Inventor/Applicant Name:	Hyoung-Gon LEE
Customer Number:	154241
Filer:	Dennis Moises De Guzman/Katherine Gardner
Filer Authorized By:	Dennis Moises De Guzman
Attorney Docket Number:	APA-KR-839496-04-US-CON
Receipt Date:	02-APR-2020
Filing Date:	30-MAR-2018
Time Stamp:	17:30:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 160
RAM confirmation Number	E202042H30098179
Deposit Account	
Authorized User	

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

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33585	no	2
			0ab3a22cffa6ff55179d4db6d342a22c8ac1bcd		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30520	no	2
			a9118214e6080f547325b91250c8ce319baa489c		
Warnings:					
Information:					
Total Files Size (in bytes):			64105		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/941,476	03/30/2018	Hyoung-Gon LEE	APA-KR-839496-04- US-CON	7139
154241	7590	01/30/2020	EXAMINER	
IP Spring - AI 180 N. LaSalle St. Suite 3700 Chicago, IL 60601			GOODCHILD, WILLIAM J	
			ART UNIT	PAPER NUMBER
			2433	
			NOTIFICATION DATE	DELIVERY MODE
			01/30/2020	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):

ajay.gambhir@ipspring.com
docket@ipspring.com
paralegalteam@ipspring.com

Office Action Summary**Application No.**

15/941,476

Applicant(s)

LEE, Hyoung-Gon

Examiner

WILLIAM J GOODCHILD

Art Unit

2433

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 03/30/2018, 07/27/2018.

☐ 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) 18-41 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) 18-41 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 03/30/2018 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

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

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

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

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

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

Attachment(s)

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

3) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date ____.

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)

4) ☐ Other: ____.

Paper No(s)/Mail Date ____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Double Patenting

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 §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

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

3. Claims 18, 21-30, 33-36 and 38-40 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 9,717,005. Although the claims at issue are not identical, they are not patentably distinct from each other because the claims are similar and slightly reworded or found within the claims of the 9,717,005 patent.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM J GOODCHILD whose telephone number is (571)270-1589. The examiner can normally be reached on M-F 8am-4:30pm.

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, Jeff Pwu can be reached on 571-272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William J. Goodchild/
Primary Examiner, Art Unit 2433

<i>Notice of References Cited</i>	Application/Control No. 15/941,476		Applicant(s)/Patent Under Reexamination LEE, Hyoung-Gon	
	Examiner WILLIAM J GOODCHILD		Art Unit 2433	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20080052779-A1	02-2008	Sinha; Amit	H04L63/1441	726/22
*	B	US-20070097904-A1	05-2007	Mukherjee; Rajat Pritam	H04W12/12	370/328
*	C	US-20110083165-A1	04-2011	Gopinath; K. N.	H04W48/04	726/4
*	D	US-20040078571-A1	04-2004	Haverinen, Henry	H04L9/0869	713/168
*	E	US-20120076072-A1	03-2012	JALFON; Marc	H04W12/02	370/328
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

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

Notice of References Cited	Application/Control No. 15/941,476	Applicant(s)/Patent Under Reexamination LEE, Hyoung-Gon	
	Examiner WILLIAM J GOODCHILD	Art Unit 2433	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
	A					
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

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

<i>Index of Claims</i> 	Application/Control No. 15/941,476	Applicant(s)/Patent Under Reexamination LEE, Hyoung-Gon
	Examiner WILLIAM J GOODCHILD	Art Unit 2433

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

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	01/26/2020								
	1	-								
	2	-								
	3	-								
	4	-								
	5	-								
	6	-								
	7	-								
	8	-								
	9	-								
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	35	✓								
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	37	✓								
	38	✓								
	39	✓								
	40	✓								
	41	✓								

<i>Search Notes</i> 	Application/Control No. 15/941,476	Applicant(s)/Patent Under Reexamination LEE, Hyoung-Gon
	Examiner WILLIAM J GOODCHILD	Art Unit 2433

CPC - Searched*		
Symbol	Date	Examiner
H04W 12/08 12/06 12/00516 12/00518 text searched	01/26/2020	WJG
H04W 8/26 text searched	01/26/2020	WJG
H04W 48/20 text searched	01/26/2020	WJG
H04W 84/12 text searched	01/26/2020	WJG
H04W 88/08 text searched	01/26/2020	WJG
H04L 63/10 text searched	01/26/2020	WJG

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

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

/William J. Goodchild/ Primary Examiner, Art Unit 2433	
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<i>Search Notes</i> 	Application/Control No. 15/941,476	Applicant(s)/Patent Under Reexamination LEE, Hyoung-Gon
	Examiner WILLIAM J GOODCHILD	Art Unit 2433

Search Notes		
Search Notes	Date	Examiner
H04W 12/08 12/06 12/00516 12/00518 text searched	01/26/2020	WJG
H04W 8/26 text searched	01/26/2020	WJG
H04W 48/20 text searched	01/26/2020	WJG
H04W 84/12 text searched	01/26/2020	WJG
H04W 88/08 text searched	01/26/2020	WJG
H04L 63/10 text searched	01/26/2020	WJG
see IP.com search	01/26/2020	WJG
Inventor search in EAST and PALM	01/26/2020	WJG
see EAST search	01/26/2020	WJG

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	claims text searched	01/26/2020	WJG

/William J. Goodchild/ Primary Examiner, Art Unit 2433	
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	243862	(H04L63/08 H04W12/08 H04W8/26 H04W12/06 H04W48/20 H04W84/12 H04W88/08 H04L63/0815 H04L63/10 H04L63/00).CLAS,CCLS,CPC,CPCL.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/27 07:37
S2	20	("7808958", "7185204", "8005458").PN.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/27 07:53
S3	41	"20080052779" "20110083165" "20110314147" "20080043686" "20070286143" "20030221006" "20120221955" "20090235077" "20120210395" "20120311328" "20130179943" "20130281056"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/27 07:55
S4	12	"20080052779" "20110083165" "20110314147" "20080043686" "20070286143" "20030221006" "20120221955" "20090235077" "20120210395" "20120311328" "20130179943" "20130281056"	US-PGPUB	OR	ON	2016/10/27 07:58
S5	5	"20120076072" "2007007904" "20060150250" "20120064912" "20050059416" "20130301617"	US-PGPUB	OR	ON	2016/10/27 08:18
S6	6	"20120076072" "20070097904" "20060150250" "20120064912" "20050059416" "20130301617"	US-PGPUB	OR	ON	2016/10/27 08:18
S7	20015	((fake faked faking false) SAME (id MAC))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/27 15:58
S8	243862	(H04L63/08 H04W12/08 H04W8/26 H04W12/06 H04W48/20 H04W84/12 H04W88/08 H04L63/0815 H04L63/10 H04L63/00).CLAS,CCLS,CPC,CPCL.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/27 15:58
S9	1627	S8 AND S7	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/27 15:58
S10	2805	((fake faked faking false) NEAR3 (id MAC))	US-PGPUB; USPAT;	OR	ON	2016/10/27 15:58

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S11	272	S8 AND S10	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/27 15:59
S12	244067	(H04L63/08 H04W12/08 H04W8/26 H04W12/06 H04W48/20 H04W84/12 H04W88/08 H04L63/0815 H04L63/10 H04L63/00).CLAS,CCLS,CPC,CPCL.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/29 16:41
S13	2805	((fake faked faking false) NEAR3 (id MAC))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/29 16:41
S14	188	S12 AND S13 AND (random rnd)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/29 16:41
S15	74	((((fake faked faking false) NEAR3 (id MAC)) SAME (rnd random))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/29 16:42
S16	14	S12 AND S15	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/29 16:42
S17	76	("lee, hyoung-gon").IN.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/10/29 17:14
S18	5	"20040264427" "20070060128" "20120201201" "20120230304" "20130150012"	US-PGPUB	OR	ON	2017/05/19 15:56
S19	6	"20040264427" "20070060128" "20120201201" "20120230304" "20130150012" "20130176897"	US-PGPUB	OR	ON	2017/05/19 15:56
S20	12	"2014081427"	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/20 13:20
S21	280129	(726/004 H04L63/08 H04W12/08 H04W8/26 H04W12/06 H04W48/20	US-PGPUB; USPAT;	OR	ON	2017/05/22 08:36

		H04W84/12 H04W88/08 H04L63/0815 H04L63/10 H04L63/00 H04L4/00).CLAS,CCLS,CPC,CPCL.	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S22	3346	((fake faked faking false dummy) SAME MAC)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 08:37
S23	852	((fake faked faking false dummy) NEAR5 MAC)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 08:38
S24	187	S21 AND S23	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 08:38
S25	42	((fake faked faking false dummy) NEAR5 MAC) AND (probe NEAR2 request)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 09:01
S26	31	S21 AND S25	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 09:01
S27	4002	(authenticated SAME access SAME point SAME information)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 12:59
S28	49	(authenticated NEAR5 ((access ADJ point) NEAR2 information))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 13:00
S29	646	(authentica\$6 NEAR5 ((access ADJ point) NEAR2 information))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:06
S30	6403	(authentica\$6 NEAR3 ((access ADJ point)))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:07
S31	4520	(authentica\$6 NEAR2 ((access ADJ point)))	US-PGPUB; USPAT;	OR	ON	2017/05/22 14:07

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S32	1771	(authenticat\$6 NEAR2 ((access ADJ point))) SAME (information list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:07
S33	700	(authenticat\$6 NEAR2 ((access ADJ point))) SAME server SAME (information list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:13
S34	131	((authenticat\$6 NEAR2 (access ADJ point)) SAME server SAME (MAC NEAR2 address))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:24
S35	82	((authenticat\$6 NEAR2 (access ADJ point)) SAME server SAME (MAC NEAR2 address) SAME (information list))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 14:57
S36	3360	((authoriz\$7 authenticat\$6) NEAR2 (access ADJ point)) SAME (send\$5 transmit\$5 request\$5))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 15:17
S37	1327	((authoriz\$7 authenticat\$6) NEAR2 (access ADJ point)) NEAR4 (send\$5 transmit\$5 request\$5))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 15:18
S38	1013	((authoriz\$7 authenticat\$6) NEAR2 (access ADJ point)) NEAR2 (send\$5 transmit\$5 request\$5))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 15:18
S39	117	((authoriz\$7 authenticat\$6) NEAR2 (access ADJ point)) NEAR2 (send\$5 transmit\$5 request\$5) NEAR2 server)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/22 15:37
S40	292536	(726/004 H04W12/08 H04W8/26 H04W12/06 H04W48/20 H04W84/12 H04W88/08 H04L63/10 H04L63/08 H04W12/08 H04W8/26 H04W12/06 H04L63/0815 H04L63/10 H04L63/00).CLAS,CCLS,CPC,CPCL.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/07 13:11
S41	3049	((fake faked faking false) NEAR3 (id MAC))	US-PGPUB; USPAT;	OR	ON	2017/09/07 13:11

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S42	311	S40 AND S41	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/07 13:11
S43	83	((fake faked faking false) SAME (probe ADJ request))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/11/16 13:33
S44	7	((fake faked faking false) NEAR3 (id! identif\$5)) SAME (probe ADJ request))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/11/16 13:40
S46	28	("20030221006" "20040078571" "20040264427" "20050059416" "20060150250" "20070060128" "20070097904" "20070286143" "20080043686" "20080052779" "20090235077" "20110083165" "20110314147" "20120064912" "20120076072" "20120201201" "20120210395" "20120221955" "20120230304" "20120311328" "20130150012" "20130176897" "20130179943" "20130281056" "20130301617" "7185204" "7808958" "8005458").PN.	US-PGPUB; USPAT	OR	ON	2019/12/30 17:50
S47	254	((generat\$5 creat\$5) SAME (fake faked) SAME (mac (media ADJ access ADJ control)))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 11:15
S48	27	((generat\$5 creat\$5) SAME (fake faked) SAME (mac (media ADJ access ADJ control)) SAME end)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 12:55
S49	53	((generat\$5 creat\$5) SAME (fake faked) SAME (mac (media ADJ access ADJ control))) AND (end NEAR2 (device phone server client mobile))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 13:05
S50	29	((generat\$5 creat\$5) NEAR5 (fake faked) NEAR5 (mac (media ADJ access ADJ control))) AND (end NEAR2 (device phone server client mobile))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 13:05
S53	101	("lee, hyoung-gon").IN.	US-PGPUB;	OR	ON	2020/01/26

			USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB			13:47
S54	243541	(MAC SAME access)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 13:48
S55	10	S53 AND S54	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 13:48
S56	411155	(726/004 H04W12/08 H04W8/26 H04W12/06 H04W48/20 H04W84/12 H04W88/08 H04L63/10 H04L63/08 H04W12/08 H04W8/26 H04W12/06 H04L63/0815 H04L63/10 H04L63/00 726/004 H04W12/08 H04W12/06 H04W12/00 H04W12/00516 H04W12/00518 H04W8/26 H04W48/20 H04W84/12 H04W88/08 H04L63/10 H04L63/08 H04L63/0815 H04L63/10).CLAS,CCLS,CPC,CPCL.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 16:14
S57	29	((generat\$5 creat\$5) NEAR5 (fake faked) NEAR5 (mac (media ADJ access ADJ control))) AND (end NEAR2 (device phone server client mobile))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 16:15
S58	10	S56 AND S57	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/26 16:15

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S45	7	((fake faked faking false) AND (id! identif\$5)) AND (probe ADJ request)).CLM.	US- PGPUB; USPAT	OR	ON	2017/11/16 14:11
S51	0	((generat\$5 creat\$5) AND (fake faked) AND (mac (media ADJ access ADJ control))) AND (end NEAR2 (device phone server client mobile))).CLM.	USPAT	OR	ON	2020/01/26 13:35
S52	4	((generat\$5 creat\$5) AND (fake faked distinct) AND (mac (media ADJ access ADJ control))) AND (end NEAR2 (device phone server client mobile))).CLM.	USPAT	OR	ON	2020/01/26 13:36

1/ 26/ 2020 4:17:55 PM
C:\Users\wgoodchild\Documents\EAST\Workspaces\15941476.wsp

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Technologies are generally described for connecting to a wireless local area network. In some examples, a method performed under control of an end device may include transmitting a probe request frame including a fake device identifier for the end device to an access point, receiving a probe...

CURRENT ASSIGNEES: EMPIRE TECH DEV LLC
US20140140321 | US APPLICATIONS | 22-MAY-2014

2

Schemes for connecting to wireless network

Technologies are generally described for connecting to a wireless local area network. In some examples, a method performed under control of an end device may include transmitting a probe request frame including a fake device identifier for the end device to an access point, receiving a probe...

CURRENT ASSIGNEES: EMPIRE TECH DEV LLC
WO2014081427A1 | WIPO APPLICATIONS | 30-MAY-2014

3

Schemes for connecting to wireless network

Technology is disclosed for preventing classification of objects, e.g., in an augmented reality system. The technology can identify a set of objects to be classified, determine whether context information for one or more objects in the identified set of objects to be classified is identified as not...

CURRENT ASSIGNEES: EMPIRE TECH DEV LLC
US20180524599 | US APPLICATIONS | 08-NOV-2018

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Schemes for connecting to wireless network

Technology is disclosed for preventing classification of objects, e.g., in an augmented reality system. The technology can identify a set of objects to be classified, determine whether context information for one or more objects in the identified set of objects to be classified is identified as not...

CURRENT ASSIGNEES: EMPIRE TECH DEV LLC
US20150230096 | US APPLICATIONS | 13-AUG-2015

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Schemes for connecting to wireless network

Technology is disclosed for preventing classification of objects, e.g., in an augmented reality system. The technology can identify a set of objects to be classified, determine whether context information for one or more objects in the identified set of objects to be classified is identified as not...

CURRENT ASSIGNEES: EMPIRE TECH DEV LLC
US9961552 | US PATENTS | 01-MAY-2018

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Schemes for connecting to wireless network

Technology is disclosed for preventing classification of objects, e.g., in an augmented reality system. The technology can identify a set of objects to be classified, determine whether context information for one or more objects in the identified set of objects to be classified is identified as not...

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US9717985 | US PATENTS | 25-JUL-2017

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INTEL CORP (18)

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PTO/SB/08a (03-15)

Doc description: Information Disclosure Statement (IDS) Filed

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

Application Number

Filing Date

2018-03-30

First Named Inventor

Hyoung-Gon LEE

Art Unit

Examiner Name

/William J. Goodchild/

Attorney Docket Number

2582-3.737BS

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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
/WJG/	1	7185204	B2	2007-02-27	Narayanaswami et al.	
/WJG/	2	7808958	B1	2010-10-05	Hernacki et al.	
/WJG/	3	8005458	B2	2011-08-23	Baik et al.	

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/WJG/	1	20030221006	A1	2003-11-27	Kuan et al	
/WJG/	2	20040078571	A1	2004-04-22	Haverinen	
/WJG/	3	20040264427	A1	2004-12-30	Jaakkola et al.	

/William J. Goodchild/

12/30/2019

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

Application Number		
Filing Date		2018-03-30
First Named Inventor	Hyoung-Gon LEE	
Art Unit		
Examiner Name	/William J. Goodchild/	
Attorney Docket Number		2582-3.737BS

/WJG/	4	20050059416	A1	2005-03-17	Ono	
/WJG/	5	20060150250	A1	2006-07-06	Lee et al.	
/WJG/	6	20070060128	A1	2007-03-15	Kil	
/WJG/	7	20070097904	A1	2007-05-03	Mukherjee et al.	
/WJG/	8	20070286143	A1	2007-12-13	Olson et al	
/WJG/	9	20080043686	A1	2008-02-21	Sperti et al	
/WJG/	10	20080052779	A1	2008-02-28	Sinha et al.	
/WJG/	11	20090235077	A1	2009-09-17	Cam Winget et al.	
/WJG/	12	20110083165	A1	2011-04-07	Gopinath et al.	
/WJG/	13	20110314147	A1	2011-12-22	Whelan et al	
/WJG/	14	20120064912	A1	2012-03-15	OH	

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First Named Inventor	Hyoung-Gon LEE	
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/WJG/	15	20120076072	A1	2012-03-29	Jalfon et al.	
/WJG/	16	20120201201	A1	2012-08-09	Liu et al.	
/WJG/	17	20120210395	A1	2012-08-16	Cam Winget et al.	
/WJG/	18	20120221955	A1	2012-08-30	Raleigh et al	
/WJG/	19	20120230304	A1	2012-09-13	Barbu et al.	
/WJG/	20	20120311328	A1	2012-12-06	Wang et al.	
/WJG/	21	20130150012	A1	2013-06-13	CHHABRA et al.	
/WJG/	22	20130176897	A1	2013-07-11	Wang et al.	
/WJG/	23	20130179943	A1	2013-07-11	Sun et al.	
/WJG/	24	20130281056	A1	2013-10-24	Abraham et al.	
/WJG/	25	20130301617	A1	2013-11-14	Kuhn et al.	

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

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First Named Inventor	Hyoung-Gon LEE	
Art Unit		
Examiner Name	/William J. Goodchild/	
Attorney Docket Number	2582-3.737BS	

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/WJG/	1	GRUTESER, M., et al, "Enhancing Location Privacy in Wireless LAN Through Disposable Interface Identifiers: A Quantitative Analysis", Mobile Networks and Applications, Vol. 10, Issue 3, pages 10 (June 2005)	
/WJG/	2	International Search Report and Written Opinion for International Application Number PCT/US12/66306 mailed on February 08, 2013, Pages 8	
/WJG/	3	SINGELEEE, D., et al., "Enabling Location Privacy in Wireless Personal Area Networks," pp 1-20, (September, 2006)	

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Filing Date		2018-03-30
First Named Inventor	Hyoung-Gon LEE	
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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

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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	/David S. Lee/	Date (YYYY-MM-DD)	2018-03-30
Name/Print	David S. Lee	Registration Number	38,222

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 Alexandria, Virginia 22313-1450
 www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 7139

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.	
15/941,476	03/30/2018	726	2433	APA-KR-839496-04-US-CON	
RULE					
APPLICANTS Empire Technology Development LLC, Wilmington, DE; INVENTORS Hyoung-Gon LEE, Gapyeong-gun, KOREA, REPUBLIC OF; ** CONTINUING DATA ***** This application is a CON of 14/693,400 04/22/2015 PAT 9961552 which is a CON of 13/885,754 05/16/2013 PAT 9717005 which is a 371 of PCT/US2012/066306 11/21/2012 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 04/25/2018					
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /WILLIAM J GOODCHILD/ Acknowledged Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY KOREA, REPUBLIC OF	SHEETS DRAWINGS 6	TOTAL CLAIMS 24	INDEPENDENT CLAIMS 3
ADDRESS IP Spring - AI 180 N. LaSalle St. Suite 3700 Chicago, IL 60601 UNITED STATES					
TITLE SCHEMES FOR CONNECTING TO WIRELESS NETWORK					
FILING FEE RECEIVED 2280	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit		



UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/941,476	03/30/2018	Hyoung-Gon LEE	APA-KR-839496-04- US-CON

CONFIRMATION NO. 7139

PUBLICATION NOTICE



OC000000103699550

154241
IP Spring - AI
180 N. LaSalle St.
Suite 3700
Chicago, IL 60601

Title:SCHEMES FOR CONNECTING TO WIRELESS NETWORK

Publication No.US-2018-0324590-A1

Publication Date:11/08/2018

NOTICE OF PUBLICATION OF APPLICATION

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

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

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

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

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

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



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/941,476	03/30/2018	Hyoung-Gon LEE	2582-3.737BS

CONFIRMATION NO. 7139

POA ACCEPTANCE LETTER



154241
IP Spring - AI
180 N. LaSalle St.
Suite 3700
Chicago, IL 60601

Date Mailed: 07/31/2018

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/27/2018.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

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

/megga/

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 15/941,476				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	300			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	660			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	760			
TOTAL CLAIMS (37 CFR 1.16(j))	24	minus 20 = * 4				x 100 =	400			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *				x 460 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	2120			
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=		x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=		x	=
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE			TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=		x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=		x	=
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE			TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.										



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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
15/941,476	03/30/2018	2414	2280	2582-3.737BS	24	3

CONFIRMATION NO. 7139

UPDATED FILING RECEIPT



00000000101341437

154241
IP Spring - AI
180 N. LaSalle St.
Suite 3700
Chicago, IL 60601

Date Mailed: 07/31/2018

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

Inventor(s)

Hyoung-Gon LEE, Gapyeong-gun, KOREA, REPUBLIC OF;

Applicant(s)

Empire Technology Development LLC, Wilmington, DE;

Assignment For Published Patent Application

Empire Technology Development LLC, Wilmington, DE

Power of Attorney: The patent practitioners associated with Customer Number 154241

Domestic Priority data as claimed by applicant

This application is a CON of 14/693,400 04/22/2015 PAT 9961552
which is a CON of 13/885,754 05/16/2013 PAT 9717005
which is a 371 of PCT/US2012/066306 11/21/2012

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

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 04/25/2018

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/941,476**

Projected Publication Date: 11/08/2018

Non-Publication Request: No

Early Publication Request: No

Title

SCHEMES FOR CONNECTING TO WIRELESS NETWORK

Preliminary Class

370

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

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

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

GRANTED

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

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

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

NOT GRANTED

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Hyoung-Gon LEE

Appl.No.: 15/941,476

Filing Date: March 30, 2018

For: SCHEMES FOR CONNECTING TO
WIRELESS NETWORK

Confirmation No.: 7139

Examiner: not yet assigned

Group Art Unit: 2414

PRELIMINARY AMENDMENT

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

Dear Sir or Madam:

In response to the Notice to File Missing Parts dated April 27, 2018 and prior to examination on the merits, it is respectfully requested that the following amendments to the specification and claims be entered:

Amendments to the Specification which begin on page 2.

Amendments to the Claims which begin on page 3.

Remarks which begin on page 8.



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/941,476	03/30/2018	Hyoung-Gon LEE	2582-3.737BS

CONFIRMATION NO. 7139

FORMALITIES LETTER



151685
Clairvolex Inc.
Allied Inventors
111 E. Broadway
Suite 725
Salt Lake City, UT 84111

Date Mailed: 04/27/2018

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

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

- The statutory basic filing fee is missing.
- The application search fee must be submitted.
- The application examination fee must be submitted.
- Surcharge as set forth in 37 CFR 1.16(f) must be submitted.

The surcharge is due for any one of:

- late submission of the basic filing fee, search fee, or examination fee,
- late submission of inventor's oath or declaration,
- filing an application that does not contain at least one claim on filing, or
- submission of an application filed by reference to a previously filed application.

SUMMARY OF FEES DUE:

The fee(s) required within **TWO MONTHS** from the date of this Notice to avoid abandonment is/are itemized below. No entity status discount is in effect. If applicant is qualified for small entity status, a written assertion of small entity status must be submitted to establish small entity status. (See 37 CFR 1.27). If applicant is qualified for micro entity status, an acceptable Certification of Micro Entity Status must be submitted to establish micro entity status. (See 37 CFR 1.29 and forms PTO/SB/15A and 15B.)

- \$ 300 basic filing fee.
- \$ 160 surcharge.
- \$ 660 search fee.
- \$ 760 examination fee.
- \$(0) previous unapplied payment amount.
- \$ 1880 TOTAL FEE BALANCE DUE.

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

Replies should be mailed to:

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

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

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

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

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

/cnguyen/

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.

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Empire Technology Development LLCApplication No./Patent No.: 15/941,476Filed/Issue Date: March 30, 2018Titled: SCHEME FOR CONNECTING TO WIRELESS NETWORKEmpire Technology Development LLC, a limited liability company

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

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

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

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

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

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

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

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

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 029343, Frame 0123, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:
1. From: _____ To: _____
- The document was recorded in the United States Patent and Trademark Office at
- Reel _____, Frame _____, or for which a copy thereof is attached.
2. From: _____ To: _____
- The document was recorded in the United States Patent and Trademark Office at
- Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

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

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

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

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

/Anand P. Narayan/

Signature

Anand P. Narayan

Printed or Typed Name

July 27, 2018

Date

Attorney for Assignee

Title or Registration Number

Privacy Act Statement

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

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

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

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:



Practitioners associated with Customer Number:

154241

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:



The address associated with Customer Number:

154241

OR



Firm or individual name

Address

City

State

Zip

Country

Telephone

Email

Assignee name and address: Empire Technology Development LLC

2711 Centerville Road, Suite 400

Wilmington, Delaware 19808

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee.

Signature <i>Dong-Gun Kim</i>	Date <i>March 8, 2018</i>
Name <i>Dong-Gun Kim</i>	Telephone <i>206-800-2401</i>
Title <i>CEO</i>	

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 18 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	15941476			
Filing Date:	30-Mar-2018			
Title of Invention:	SCHEMES FOR CONNECTING TO WIRELESS NETWORK			
First Named Inventor/Applicant Name:	Hyoung-Gon LEE			
Filer:	Anand P. Narayan/Katherine Gardner			
Attorney Docket Number:	2582-3.737BS			
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	300	300
UTILITY SEARCH FEE	1111	1	660	660
UTILITY EXAMINATION FEE	1311	1	760	760
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	4	100	400
Miscellaneous-Filing:				
LATE FILING FEE FOR OATH OR DECLARATION	1051	1	160	160

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with \$0 paid	1251	1	200	200
Miscellaneous:				
Total in USD (\$)				2480

Electronic Acknowledgement Receipt

EFS ID:	33297792
Application Number:	15941476
International Application Number:	
Confirmation Number:	7139
Title of Invention:	SCHEMES FOR CONNECTING TO WIRELESS NETWORK
First Named Inventor/Applicant Name:	Hyoung-Gon LEE
Customer Number:	151685
Filer:	Anand P. Narayan/Katherine Gardner
Filer Authorized By:	Anand P. Narayan
Attorney Docket Number:	2582-3.737BS
Receipt Date:	27-JUL-2018
Filing Date:	30-MAR-2018
Time Stamp:	16:26:28
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$2480
RAM confirmation Number	073018INTEFSW16274600
Deposit Account	
Authorized User	

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

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		KR-839496-04-US-CON_PreliminaryAmendment_27JUL2018.pdf	114269	yes	8
			1033c1232e3d74d70631a48803285bc17c1f26e8		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Applicant Arguments/Remarks Made in an Amendment		8	8	
	Claims		3	7	
	Specification		2	2	
	Preliminary Amendment		1	1	
Warnings:					
Information:					
2	Applicant Response to Pre-Exam Formalities Notice	KR-839496-04-US-CON_NTFMP_27APR2018.pdf	79900	no	2
			111645eb9161188d9cf87318fb02db17994b41e9		
Warnings:					
Information:					
3	Assignee showing of ownership per 37 CFR 3.73	KR-839496-04-US-CON_Statement_Under_37_CFR_R_373c.pdf	123367	no	3
			5e456ef64c3058c15dcc031641bac96292810070		
Warnings:					
Information:					
4	Power of Attorney	PTO-AIA-80_Empire_Technology_Development_LLC.pdf	236889	no	2
			2673470e983efb67cd02ab0fe3f933ff34584abe		
Warnings:					
Information:					

5	Fee Worksheet (SB06)	fee-info.pdf	40675 d25262ce6cc6ed0443bb7c61e0760e99b3dd753	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			595100		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

REMARKS

This Preliminary Amendment is being made to cancel claims 1-17 without prejudice and to add new claims 18-41. Support for the recitations in these new claims can be found in paragraphs [0002], [0022], and other paragraphs of the specification as filed. Thus, no new matter is being added. The filing fees submitted herewith are based on the presently pending claims 18-41.

Examination and allowance of the pending claims is kindly requested. If a telephone interview would expedite the prosecution of this application, the Examiner is invited to call the attorney of record Dennis M. de Guzman at (425) 505-0910.

The Commissioner is hereby authorized to charge to the Deposit Account No. 50-5597 (2582-3.737BS) any (large entity sized) fees under 37 CFR 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,
/Anand P. Narayan/
Anand P. Narayan
Reg. No. 54,332

Date: July 27, 2018

Customer No. 154241

IP Spring

180 N. LaSalle St, Ste. 3700
Chicago, IL 60601
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AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listing of claims in this application.

Listing of Claims:

1. – 17. (Canceled)

18. (New) A method performed under control of an end device, the method comprising:

generating, by the end device, a fake media access control (MAC) address for the end device;

transmitting, by the end device to an access point, a probe request that includes the fake MAC address;

receiving, by the end device from the access point, a probe response that includes information regarding the access point;

determining, by the end device, that the access point is an authenticated access point based, at least in part, on the information in the probe response being indicative that the access point was connected with the end device previous to when the access point received the probe request transmitted by the end device; and

transmitting, by the end device to the access point determined to be the authenticated access point, a connection request that includes an authentic device identifier for the end device.

19. (New) The method of claim 18, wherein the fake MAC address is distinct from an actual original MAC address of a hardware network interface of the end device.

20. (New) The method of claim 18, wherein information in the probe request is insufficient to identify the end device, so as to prevent leakage of present location information of the end device to non-authenticated access points.

21. (New) The method of claim 18, wherein generating the fake MAC address includes generating the fake MAC address from one or more characters that are selected randomly.

22. (New) The method of claim 18, wherein the authentic device identifier for the end device includes an authentic MAC address for a hardware network interface of the end device.

23. (New) The method of claim 18, further comprising:
receiving, by the end device from the access point, an approval of the connection request;
and
connecting, by the end device, to a wireless local area network provided by the access point.

24. (New) The method of claim 18, wherein the access point includes a Wi-Fi access point, and wherein the wireless local area network includes a Wi-Fi network.

25. (New) The method of claim 18, further comprising:
receiving, by the end device, a list of authenticated access points that includes information regarding one or more access points,
wherein determining that the access point is the authenticated access point is further based on determining that the access point is included in the list of authenticated access points.

26. (New) A method performed by an end device, the method comprising:
obtaining, by the end device, an authenticated access point list that includes information regarding one or more access points;
generating, by the end device a media access control (MAC) address for the end device that is distinct from an actual MAC address for a hardware network interface of the end device;
transmitting, by the end device to at least one access point, a probe request that includes the generated MAC address;
receiving, by the end device from the at least one access point in response to the probe

request, a probe response that includes information regarding the at least one access point;

determining, by the end device based at least, in part, on the information regarding the at least one access point, that the at least one access point is an authenticated access point,

wherein determining that the at least one access point is the authenticated access point includes determining that the information regarding the at least one access point is included in the authenticated access point list; and

transmitting, by the end device to the at least one access point after determining that the at least one access point is the authenticated access point, a connection request that includes an authentic device identifier for the end device.

27. (New) The method of claim 26, wherein information in the probe request is insufficient to identify the end device, so as to prevent leakage of present location information of the end device to non-authenticated access points.

28. (New) The method of claim 26, wherein generating the MAC address includes generating the MAC address from one or more characters that are selected randomly.

29. (New) The method of claim 26, wherein the information regarding one or more access points includes at least one of a MAC address of each of the one or more access points, or a service set identifier (SSID) of each of the one or more access points.

30. (New) The method of claim 26, wherein determining that the at least one access point is the authenticated access point further includes determining that the at least one access point is the authenticated access point if the end device was previously connected to the at least one authenticated access point.

31. (New) The method of claim 26, further comprising:
receiving, by the end device from the at least one access point, an approval of the connection request;
transmitting, by the end device to the at least one access point after receiving the approval of the connection request, an association request;

receiving, by the end device from the at least one access point, an association response to the association request; and

connecting to a communication network via the at least one access point in accordance with the association response.

32. (New) The method of claim 31, wherein the at least one access point includes a Wi-Fi access point, and wherein the communication network includes a Wi-Fi network that is accessible through the Wi-Fi access point.

33. (New) The method of claim 26, wherein the authentic device identifier of the end device includes the actual MAC address for the hardware network interface of the end device.

34. (New) An end device, comprising:
a hardware network interface associated with an actual media access control (MAC) address;
a processor coupled to the hardware network interface and operable to generate a MAC address for the end device that is distinct from the actual MAC address;
a transmitter coupled to the processor and operable to transmit to an access point, a probe request that includes the generated MAC address; and
a receiver coupled to the processor and operable to receive, from the access point, a probe response that includes information regarding the access point,
wherein the processor is further operable to determine that the access point is an authenticated access point based, at least in part, on the information regarding the access point being indicative that the access point was connected with the end device previous to when the access point received the probe request transmitted from the transmitter, and
wherein the hardware network interface is operable to connect, in response to determination that the access point is the authenticated access point, the end device to a wireless local area network provided by the access point.

35. (New) The end device of claim 34, wherein the access point includes a Wi-Fi access point, and wherein the wireless local area network includes a Wi-Fi network.

36. (New) The end device of claim 34, wherein the processor is operable to generate the MAC address from one or more characters that are selected randomly.

37. (New) The end device of claim 34, wherein:
the transmitter is further operable to transmit, to the access point in response to the determination that the access point is the authenticated access point, a connection request that includes an authentic device identifier for the end device,

the receiver is further operable to receive, from the access point, an approval of the connection request, and

the hardware network interface is operable to connect to the wireless local area network after the receiver receives the approval of the connection request.

38. (New) The end device of claim 37, wherein the authentic device identifier for the end device includes the actual MAC address.

39. (New) The end device of claim 34, further comprising a memory coupled to the processor and operable to store a list of authenticated access points that includes the information regarding the access point, wherein the information regarding the access point includes at least one of a MAC address of the access point, or a service set identifier (SSID) of the access point.

40. (New) The end device of claim 34, wherein the end device includes one of a cell phone, a personal data assistant (PDA), a personal media player device, a wireless web-watch device, a personal headset device, an application specific device, or a hybrid device.

41. (New) The end device of claim 34, wherein information in the probe request is insufficient to identify the end device, so as to prevent leakage of present location information of the end device to non-authenticated access points.

AMENDMENTS TO THE SPECIFICATION

The following will replace all prior versions of the listed paragraph(s) in the application.

Please amend the paragraph under the CROSS-REFERENCE TO RELATED APPLICATIONS heading, on page 1 immediately prior to the BACKGROUND heading and paragraph [0001], as follows:

This Application is a Continuation Application under 35 U.S.C. § 120 of U.S. Patent Application No. 14/693,400, filed on April 22, 2015, now U.S. Patent No. 9,961,552, which is a Continuation Application under 35 U.S.C. § 120 of U.S. Patent Application No. 13/885,754, filed on May 16, 2013, now U.S. Patent No. 9,717,005, which is a U.S. National Stage filing under 35 U.S.C. § 371 of International Application No. PCT/US12/66306, filed on November 21, 2012. U.S. Patent Application No. 14/693,400, U.S. Patent Application No. 13/885,754, and International Application No. PCT/US12/66306 are hereby incorporated by reference in their entireties.



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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
15/941,476	03/30/2018	2414	0.00	2582-3.737BS	17	3

CONFIRMATION NO. 7139

FILING RECEIPT



0000000099061189

151685
Clairvolex Inc.
Allied Inventors
111 E. Broadway
Suite 725
Salt Lake City, UT 84111

Date Mailed: 04/27/2018

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

Inventor(s)

Hyoung-Gon LEE, Gapyeong-gun, KOREA, REPUBLIC OF;

Applicant(s)

Empire Technology Development LLC, Wilmington, DE;

Assignment For Published Patent Application

Empire Technology Development LLC, Wilmington, DE

Power of Attorney: The patent practitioners associated with Customer Number 151685

Domestic Priority data as claimed by applicant

This application is a CON of 14/693,400 04/22/2015 PAT 9961552
which is a CON of 13/885,754 05/16/2013 PAT 9717005
which is a 371 of PCT/US2012/066306 11/21/2012

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

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 04/25/2018

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/941,476**

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No
Title

SCHEMES FOR CONNECTING TO WIRELESS NETWORK

Preliminary Class

370

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

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

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

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

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

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/941,476	03/30/2018	Hyoung-Gon LEE	2582-3.737BS

CONFIRMATION NO. 7139

FORMALITIES LETTER



151685
Clairvortex Inc.
Allied Inventors
111 E. Broadway
Suite 725
Salt Lake City, UT 84111

Date Mailed: 04/27/2018

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

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

- The statutory basic filing fee is missing.
- The application search fee must be submitted.
- The application examination fee must be submitted.
- Surcharge as set forth in 37 CFR 1.16(f) must be submitted.

The surcharge is due for any one of:

- late submission of the basic filing fee, search fee, or examination fee,
- late submission of inventor's oath or declaration,
- filing an application that does not contain at least one claim on filing, or
- submission of an application filed by reference to a previously filed application.

SUMMARY OF FEES DUE:

The fee(s) required within **TWO MONTHS** from the date of this Notice to avoid abandonment is/are itemized below. No entity status discount is in effect. If applicant is qualified for small entity status, a written assertion of small entity status must be submitted to establish small entity status. (See 37 CFR 1.27). If applicant is qualified for micro entity status, an acceptable Certification of Micro Entity Status must be submitted to establish micro entity status. (See 37 CFR 1.29 and forms PTO/SB/15A and 15B.)

- \$ **300** basic filing fee.
- \$ **160** surcharge.
- \$ **660** search fee.
- \$ **760** examination fee.
- \$ **(0)** previous unapplied payment amount.
- \$ **1880** TOTAL FEE BALANCE DUE.

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

Replies should be mailed to:

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

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

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

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

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

/cnguyen/

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 15/941,476				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	300			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	660			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	760			
TOTAL CLAIMS (37 CFR 1.16(j))	17	minus 20 = *			OR	x 100 =	0.00			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *				x 460 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1720			
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.										

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2018-03-30
	First Named Inventor	Hyoung-Gon LEE	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	2582-3.737BS	

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	7185204	B2	2007-02-27	Narayanaswami et al.	
	2	7808958	B1	2010-10-05	Hernacki et al.	
	3	8005458	B2	2011-08-23	Baik et al.	

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

[Add](#)

U.S.PATENT APPLICATION PUBLICATIONS						Remove
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20030221006	A1	2003-11-27	Kuan et al	
	2	20040078571	A1	2004-04-22	Haverinen	
	3	20040264427	A1	2004-12-30	Jaakkola et al.	

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

Application Number		
Filing Date		2018-03-30
First Named Inventor	Hyoung-Gon LEE	
Art Unit		
Examiner Name		
Attorney Docket Number	2582-3.737BS	

4	20050059416	A1	2005-03-17	Ono	
5	20060150250	A1	2006-07-06	Lee et al.	
6	20070060128	A1	2007-03-15	Kil	
7	20070097904	A1	2007-05-03	Mukherjee et al.	
8	20070286143	A1	2007-12-13	Olson et al	
9	20080043686	A1	2008-02-21	Sperti et al	
10	20080052779	A1	2008-02-28	Sinha et al.	
11	20090235077	A1	2009-09-17	Cam Winget et al.	
12	20110083165	A1	2011-04-07	Gopinath et al.	
13	20110314147	A1	2011-12-22	Whelan et al	
14	20120064912	A1	2012-03-15	OH	

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

Application Number		
Filing Date		2018-03-30
First Named Inventor	Hyoung-Gon LEE	
Art Unit		
Examiner Name		
Attorney Docket Number	2582-3.737BS	

15	20120076072	A1	2012-03-29	Jalfon et al.	
16	20120201201	A1	2012-08-09	Liu et al.	
17	20120210395	A1	2012-08-16	Cam Winget et al.	
18	20120221955	A1	2012-08-30	Raleigh et al	
19	20120230304	A1	2012-09-13	Barbu et al.	
20	20120311328	A1	2012-12-06	Wang et al.	
21	20130150012	A1	2013-06-13	CHHABRA et al.	
22	20130176897	A1	2013-07-11	Wang et al.	
23	20130179943	A1	2013-07-11	Sun et al.	
24	20130281056	A1	2013-10-24	Abraham et al.	
25	20130301617	A1	2013-11-14	Kuhn et al.	

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

Application Number		
Filing Date		2018-03-30
First Named Inventor	Hyoung-Gon LEE	
Art Unit		
Examiner Name		
Attorney Docket Number	2582-3.737BS	

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

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							

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	GRUTESER, M., et al, "Enhancing Location Privacy in Wireless LAN Through Disposable Interface Identifiers: A Quantitative Analysis", Mobile Networks and Applications, Vol. 10, Issue 3, pages 10 (June 2005)	
	2	International Search Report and Written Opinion for International Application Number PCT/US12/66306 mailed on February 08, 2013, Pages 8	
	3	SINGELEEE, D., et al., "Enabling Location Privacy in Wireless Personal Area Networks," pp 1-20, (September, 2006)	

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

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

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

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

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

Application Number	
Filing Date	2018-03-30
First Named Inventor	Hyoung-Gon LEE
Art Unit	
Examiner Name	
Attorney Docket Number	2582-3.737BS

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	/David S. Lee/	Date (YYYY-MM-DD)	2018-03-30
Name/Print	David S. Lee	Registration Number	38,222

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

Privacy Act Statement

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

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. N/A
Filing Date March 30, 2018
Confirmation No. N/A
Inventorship..... Hyoung-Gon LEE
Group Art Unit N/A
Examiner N/A
Attorney Docket No. 2582-3.737BS
Title: SCHEMES FOR CONNECTING TO WIRELESS NETWORK

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.97 & 1.98

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

Sir:

In the matter of the above-identified application, this Information Disclosure Statement is being submitted with the following citation as specified in 37 CFR § 1.98 (d)

" A copy of any patent, publication, pending U.S. application or other information, as specified in paragraph (a) of this section, listed in an information disclosure statement is required to be provided, even if the patent, publication, pending U.S. application or other information was previously submitted to, or cited by, the Office in an earlier application, unless:

(1) The earlier application is properly identified in the information disclosure statement and is relied on for an earlier effective filing date under 35 U.S.C. 120..."

Applicant(s) are submitting herewith a copy of Form PTO-1449 which list documents cited in parent application(s) Serial No. 14/693,400, filed April 22, 2015.

It is respectfully requested that this information disclosure statement be considered by the Examiner.

Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of BRUNDIDGE & STANGER, P.C., Deposit Account No. 50-4888 (2582-3.737BS) please credit any excess fees to such deposit account.

Respectfully submitted,

/David S. Lee/

David S. Lee
Registration No. 38,222
BRUNDIDGE & STANGER, P.C.

DSL/mhd
(703) 684-1470

Electronic Acknowledgement Receipt

EFS ID:	32208338
Application Number:	15941476
International Application Number:	
Confirmation Number:	7139
Title of Invention:	SCHEMES FOR CONNECTING TO WIRELESS NETWORK
First Named Inventor/Applicant Name:	Hyoung-Gon LEE
Customer Number:	151685
Filer:	David S. Lee/Mariah Duell
Filer Authorized By:	David S. Lee
Attorney Docket Number:	2582-3.737BS
Receipt Date:	30-MAR-2018
Filing Date:	
Time Stamp:	14:00:08
Application Type:	Utility under 35 USC 111(a)

Payment information:

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

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	KR-839496-04-US- CON_20180330_ADS.pdf	1823474	no	8
			841349800817e81adadd30c77139606e348 6c6b1		

Warnings:

Information:					
2		KR-839496-04-US- CON_20180330_Spec.pdf	127528	yes	23
			b9a50848283a0f944fdf3009e0fd06d5eafb b086		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Abstract		23	23	
	Claims		19	22	
	Specification		1	18	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	KR-839496-04-US- CON_20180330_Drawings.pdf	954294	no	6
			8c0427a607bd2ff4b533c79c6f02648ec074 d13b		
Warnings:					
Information:					
4	Oath or Declaration filed	KR-839496-04-US- CON_20180330_Declaration. pdf	77850	no	1
			022a36c155373e77229bac720bf2b40cc12 33ae1		
Warnings:					
Information:					
5	Information Disclosure Statement (IDS) Form (SB08)	KR-839496-04-US- CON_20180330_IDS.pdf	1036444	no	6
			cb225b7681526259caff077cc473bf34037cf 08a		
Warnings:					
Information:					
6	Transmittal Letter	KR-839496-04-US- CON_20180330_IDS_Transmitt al.pdf	39817	no	1
			61028d66d2aed8637dc02fa58b91f683c1b 897b4		
Warnings:					
Information:					
Total Files Size (in bytes):			4059407		

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	2582-3.737BS
		Application Number	
Title of Invention	SCHEMES FOR CONNECTING TO WIRELESS NETWORK		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

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

Inventor Information:

Inventor	1				Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Hyoung-Gon		LEE		
Residence Information (Select One) US Residency • Non US Residency Active US Military Service					
City	Gapyeong-gun, Gyeonggi-do		Country of Residence ⁱ	KR	
Mailing Address of Inventor:					
Address 1	112-18, Yongmuncheon-gil, Seorak-myeon				
Address 2					
City	Gapyeong-gun, Gyeonggi-do		State/Province		
Postal Code	12460		Country ⁱ	KR	
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	151685		
Email Address	Allied-Inventors-docketing@clairvortex.com	Add Email	Remove Email

Application Information:

Title of the Invention	SCHEMES FOR CONNECTING TO WIRELESS NETWORK		
Attorney Docket Number	2582-3.737BS	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	2582-3.737BS
		Application Number	
Title of Invention	SCHEMES FOR CONNECTING TO WIRELESS NETWORK		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

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

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	151685		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	14693400	2015-04-22

Application Data Sheet 37 CFR 1.76		Attorney Docket Number		2582-3.737BS	
		Application Number			
Title of Invention		SCHEMES FOR CONNECTING TO WIRELESS NETWORK			
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14693400	Continuation of	13885754	2013-05-16	9717005	2017-07-25
Prior Application Status				Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
13885754	a 371 of international	PCT/US2012/066306	2012-11-21		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.					Add

Foreign Priority Information:

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

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Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)
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Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

- ☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
- NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	2582-3.737BS
	Application Number	
Title of Invention	SCHEMES FOR CONNECTING TO WIRELESS NETWORK	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	2582-3.737BS
		Application Number	
Title of Invention	SCHEMES FOR CONNECTING TO WIRELESS NETWORK		

Applicant Information:

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

Applicant	1	Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section. Clear		
☒ Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:		
Name of the Deceased or Legally Incapacitated Inventor:		
If the Applicant is an Organization check here. ☒		
Organization Name	Empire Technology Development LLC	
Mailing Address Information For Applicant:		
Address 1	2711 Centerville Road	
Address 2	Suite 400	
City	Wilmington	State/Province DE
Country	US	Postal Code 19808
Phone Number		Fax Number
Email Address		
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Assignee Information including Non-Applicant Assignee Information:

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	2582-3.737BS
		Application Number	
Title of Invention	SCHEMES FOR CONNECTING TO WIRELESS NETWORK		

Assignee	1		
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.			
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This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

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

Signature	/David S. Lee/		Date (YYYY-MM-DD)	2018-03-30	
First Name	David	Last Name	Lee	Registration Number	38,222
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	2582-3.737BS
		Application Number	
Title of Invention	SCHEMES FOR CONNECTING TO WIRELESS NETWORK		

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

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- 7 A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
- 8 A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
- 9 A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ABSTRACT

Technology is disclosed for preventing classification of objects, e.g., in an augmented reality system. The technology can identify a set of objects to be classified, determine whether context information for one or more objects in the identified set of objects to be classified is identified as not to be employed during classification, and during classification of two different objects, include context information for one object but not the other.

CLAIMS

What is claimed is:

1. A method performed by an access point, the method comprising:
 - receiving, by the access point from a device, a probe request frame that includes a fake device identifier for the device, wherein the fake device identifier is received at the device from a server, and wherein the fake device identifier includes at least one of: one or more random numbers, or one or more random characters;
 - transmitting, by the access point to the device, a probe response frame that includes information regarding the access point;
 - receiving, by the access point from the device in response to the transmitting the probe response frame, a connection request that includes an authentic device identifier for the device, wherein the receiving the connection request includes receiving the connection request in response to an authentication of the access point based on an authenticated point list received at the device from the server, and wherein the authenticated point list includes information that indicates that the access point is an authenticated access point; and
 - transmitting, by the access point to the device in response to the receiving the connection request, an approval of the connection request, wherein the access point is controlled by the server.
2. The method of Claim 1, further comprising:
 - receiving, from the device, an association request;
 - transmitting, to the device, an association response to the association request; and
 - facilitating connection of the device to a communication network via the access point in accordance with the association response.
3. The method of Claim 2, wherein the access point includes a Wi-Fi access point, and wherein the communication network includes a Wi-Fi network.
4. The method of Claim 1, wherein the access point was previously communicatively coupled with the device.

5. The method of Claim 1, wherein the authentic device identifier includes a media access control (MAC) address of the device.

6. The method of Claim 1, wherein the information regarding the access point includes at least one of a media access control (MAC) address of the access point or a service set identifier (SSID) of the access point.

7. A method performed by a device, the method comprising:

- receiving, from a server, an authenticated access point list that includes information regarding one or more access points that are controlled by the server;
- receiving, from the server, a fake device identifier for the device, wherein the received fake device identifier includes at least one of: one or more random numbers, or one or more random characters to falsely identify the device in a probe request frame;
- transmitting, to at least one access point, the probe request frame that includes the received fake device identifier;
- receiving, from the at least one access point in response to the transmitting the probe request frame, a probe response frame that includes information regarding the at least one access point;
- determining, in response to the receiving the probe response frame and based at least, in part, on the information regarding the at least one access point, whether the at least one access point is an authenticated access point, wherein the determining whether the at least one access point is the authenticated access point includes determining whether the information regarding the at least one access point is included in the authenticated access point list that is received from the server; and
- transmitting, to the at least one access point in response to a determination that the at least one access point is the authenticated access point, a connection request that includes an authentic device identifier for the device.

8. The method of Claim 7, wherein the receiving the fake device identifier includes receiving a fake media access control (MAC) address.

9. The method of Claim 7, wherein the determining whether the information regarding the at least one access point is included in the authenticated access point list comprises determining whether the at least one access point is under control of the server.

10. The method of Claim 7, further comprising:
storing the authenticated access point list in a memory.

11. The method of Claim 7, further comprising:
receiving, from the at least one access point, an approval of the connection request;
transmitting, to the at least one access point in response to the receiving the approval of the connection request, an association request;
receiving, from the at least one access point, an association response to the association request; and
connecting to a communication network via the at least one access point in accordance with the association response.

12. A method performed by a device, the method comprising:
receiving, from a server, an authenticated access point list that includes information regarding one or more access points that are controlled by the server;
generating a fake device identifier for the device, wherein the fake device identifier includes at least one of: one or more random numbers, or one or more random characters;
transmitting, to at least one access point, a probe request frame that includes the fake device identifier;
receiving, from the at least one access point in response to the transmitting the probe request frame, a probe response frame that includes information regarding the at least one access point;
determining, based at least, in part, on the information regarding the at least one access point, whether the at least one access point is an authenticated access point, wherein the determining whether the at least one access point is the authenticated access point includes determining whether the information regarding the at least one access point is included in the authenticated access point list that is received from the server, and wherein the determining whether the information regarding the at least one access point is included in

the authenticated access point list includes determining whether the at least one access point is under control of the server; and

transmitting, to the at least one access point in response to a determination that the at least one access point is the authenticated access point, a connection request that includes an authentic device identifier for the device.

13. The method of Claim 12, wherein the generating the fake device identifier includes generating a fake media access control (MAC) address.

14. The method of Claim 12, wherein the information regarding the at least one access point includes at least one of a media access control (MAC) address of the at least one access point or a service set identifier (SSID) of the at least one access point.

15. The method of Claim 12, wherein the determining whether the at least one access point is the authenticated access point further includes determining whether the at least one access point was previously connected with the device.

16. The method of Claim 12, further comprising:
storing the authenticated access point list, received from the server, in a memory.

17. The method of Claim 12, further comprising:
receiving, from the at least one access point, an approval of the connection request;
transmitting, to the at least one access point in response to the receiving the approval of the connection request, an association request;
receiving, from the at least one access point, an association response to the association request; and
connecting to a communication network via the at least one access point in accordance with the association response.

SCHEMES FOR CONNECTING TO WIRELESS NETWORK

CROSS-REFERENCE TO RELATED APPLICATIONS

This Application is a Continuation Application under 35 U.S.C. § 120 of U.S. Patent Application No. 14/693,400, filed on April 22, 2015, which is a Continuation Application under 35 U.S.C. § 120 of U.S. Patent Application No. 13/885,754, filed on May 16, 2013, now U.S. Patent No. 9,717,005, which is a U.S. National Stage filing under 35 U.S.C. § 371 of International Application No. PCT/US12/66306, filed on November 21, 2012. U.S. Patent Application No. 14/693,400, U.S. Patent Application No. 13/885,754, and International Application No. PCT/US12/66306 are hereby incorporated by reference in their entireties.

BACKGROUND

[0001] The availability of third generation (3G) and fourth generation (4G) mobile telecommunications technologies, and Wi-Fi wireless access technologies make it possible to provide wireless data communications. It is generally preferable to use Wi-Fi networks for data transmission because Wi-Fi wireless access technologies are typically available at lower cost but with higher throughput than the third generation (3G) and/or fourth generation (4G) mobile telecommunications technologies. However, security for Wi-Fi wireless access technologies has drawn intense scrutiny.

SUMMARY

[0002] In an example, a method performed under control of an end device first device may include transmitting a probe request frame including a fake device identifier for the end device to an access point, receiving a probe response frame including information regarding the access point from the access

point, determining whether the access point is an authenticated access point based at least in part on the information regarding the access point, and transmitting a connection request including an authentic device identifier for the end device to the access point.

[0003] In another example, an end device may include a transmitting unit configured to transmit a probe request frame including a fake device identifier to an access point, a receiving unit configured to receive a probe response frame including information regarding the access point from the access point, a memory configured to store an authenticated access point list including information regarding at least one authenticated access point, a determination unit configured to determine whether the access point is an authenticated access point based at least in part on the information regarding the access point or the authenticated access point list, and a connecting unit configured to connect to a wireless local area network provided by the access point. The transmitting unit is further configured to transmit a connection request including an original device identifier to the access point, and the receiving unit is further configured to receive an approval of the connection request from the access point.

[0004] In yet another example, a computer-readable storage medium may store thereon computer-executable instructions that, in response to execution, cause an end device to perform operations, including transmitting a probe request frame including a fake device identifier of the end device to an access point, receiving a probe response frame including information regarding the access point from the access point, determining whether the access point is an authenticated access point based at least in part regarding the information regarding the access point, and transmitting a connection request including an original device identifier of the end device to the access point.

[0005] The foregoing summary is illustrative only and is not intended to be in any way limiting. In addition to the illustrative aspects, embodiments, and features described above, further aspects, embodiments, and features will become apparent by reference to the drawings and the following detailed

description.

BRIEF DESCRIPTION OF THE FIGURES

[0006] The foregoing and other features of this disclosure will become more fully apparent from the following description and appended claims, taken in conjunction with the accompanying drawings. With the understanding that these drawings depict only several embodiments in accordance with the disclosure and are, therefore, not to be considered limiting of its scope, the disclosure will be described with additional specificity and detail through use of the accompanying drawings, in which:

[0007] Fig. 1 schematically shows an illustrative example of a network communications environment including a mobile operating server, an access point and an end device, arranged in accordance with at least some embodiments described herein;

[0008] Fig. 2 schematically shows an illustrative example of an authenticated access point list, arranged in accordance with at least some embodiments described herein;

[0009] Fig. 3 shows an example flow diagram of a process of an end device for connecting to a wireless local area network, arranged in accordance with at least some embodiments described herein;

[0010] Fig. 4 shows a schematic block diagram illustrating an example architecture for an end device, arranged in accordance with at least some embodiments described herein;

[0011] Fig. 5 illustrates a computer program product that may be utilized to provide a scheme for connecting to a wireless local area network, arranged in accordance with at least some embodiments described herein; and

[0012] Fig. 6 is a block diagram illustrating an example computing device that may be utilized to provide a scheme for connecting to a wireless local area network, arranged in accordance with at least some embodiments described herein.

DETAILED DESCRIPTION

[0013] In the following detailed description, reference is made to the accompanying drawings, which form a part hereof. In the drawings, similar symbols typically identify similar components, unless context dictates otherwise. The illustrative embodiments described in the detailed description, drawings, and claims are not meant to be limiting. Other embodiments may be utilized, and other changes may be made, without departing from the spirit or scope of the subject matter presented herein. It will be readily understood that the aspects of the present disclosure, as generally described herein, and illustrated in the Figures, can be arranged, substituted, combined, separated, and designed in a wide variety of different configurations, all of which are explicitly contemplated herein.

[0014] This disclosure is generally drawn, *inter alia*, to methods, apparatuses, systems, devices, and computer program products related to secured wireless network communication schemes.

[0015] Technologies are generally described for connecting to wireless networks while preventing leakage of location information of an end device.

[0016] In general, in order to connect to a wireless local area network (WLAN), an end device may search for at least one available access point around the end device. By way of example, but not limitation, the access point may be a Wi-Fi access point and the WLAN may be a Wi-Fi network. When searching, the end device may transmit a probe request frame that may include a device identifier, for the end device such as a media access control (MAC)

address of the end device. In such cases, since the probe request frame that includes the device identifier is transmitted to access points around the end device, present location information of the end device may be exposed to some access points with which a user of the end device does not want to be connected and/or other devices to which the end device does not want to disclose the present location information.

[0017] In some embodiments, an end device may transmit a probe request frame that includes a fake device identifier for the end device to at least one access point around the end device. As a response to the probe request frame, the end device may receive a probe response frame from one or more access points. The probe response frame may include information regarding the access point. By way of example, but not limitation, the information regarding the access point may include a MAC address of the access point and/or a service set identifier (SSID) of the access point.

[0018] The end device may determine whether there is an authenticated access point around the end device based at least in part on the information included in the probe response frame. If there is an authenticated access point around the end device, the end device may transmit a connection request including an authentic device identifier for the end device, such as an original MAC address, to the authenticated access point. Then, the end device may connect to a wireless local area network provided by the authenticated access point without a leakage of present location information of the end device to undesirable access points.

[0019] Fig. 1 schematically shows an illustrative example of a network communications environment 100 including a mobile operating server, an access point, and an end device, arranged in accordance with at least some embodiments described herein.

[0020] As illustrated in Fig. 1, network communications environment 100 may include a mobile operating server 110, an access point 120 and an end

device 130. Mobile operating server 110 may control access point 120. In Fig 1, although only one access point (i.e., access point 120) is located around end device 130, so that end device 130 is located in a network area 140 provided by access point 120, there could be two or more access points around end device 130.

[0021] By way of example, access point 120 may include a Wi-Fi access point and provide a WLAN that includes a Wi-Fi network. Further, by way of example, end device 130 may include, but not exclusively, a personal communication terminal, such as PCS (Personal Communication System), GSM (Global System for Mobile communications), PDC (Personal Digital Cellular), PHS (Personal Handyphone System), PDA (Personal Digital Assistant), IMT (International Mobile Telecommunication)-2000, CDMA (Code Division Multiple Access)-2000, W-CDMA (W-Code Division Multiple Access) and Wibro (Wireless Broadband) Internet terminals.

[0022] End device 130 may transmit a probe request frame, which may include a fake device identifier (for example, a fake MAC address), to access point 120 for end device 130. By way of example, but not limitation, the fake device identifier may include one or both of one or more random numbers or one or more random characters. In some embodiments, end device 130 may generate the fake device identifier and transmit the generated fake device identifier to access point 120. Further, in some other embodiments, mobile operating server 110 may provide end device 130 with the fake device identifier, and end device 130 may transmit the provided fake device identifier to access point 120.

[0023] End device 130 may receive a probe response frame from access point 120 to which end device 130 transmitted the probe request frame. The probe response frame may include information regarding access point 120. By way of example, but not limitation, the information regarding access point 120 may include a MAC address of access point 120 and/or an SSID of access point 120.

[0024] End device 130 may determine whether access point 120, which transmitted the probe response frame to end device 130, is an authenticated access point based at least in part on the information regarding access point 120. In some embodiments, end device 130 may receive an authenticated access point list including information regarding at least one authenticated access point from mobile operating server 110. End device 130 may determine whether access point 120 is an authenticated access point based at least in part on the authenticated access point list. By way of example, end device 130 may check whether the information regarding access point 120 is included in the authenticated access point list. If the information regarding access point 120 is included in the authenticated access point list, end device 130 may recognize access point 120 as an authenticated access point. By way of example, but not limitation, the authenticated access point may include an access point controlled by mobile operating server 110 and/or an access point previously connected with end device 130.

[0025] Fig. 2 schematically shows an illustrative example of an authenticated access point list 200, arranged in accordance with at least some embodiments described herein. As illustrated in Fig. 2, authenticated access point list 200 may include the information regarding at least one authenticated access point. By way of example, but not limitation, the information regarding the least one authenticated access point may include a MAC address or an SSID of each authenticated access point.

[0026] Referring back to Fig. 1, end device 130 may transmit a connection request, including an authentic device identifier, to authenticated access point 120 for end device 130. By way of example, but not limitation, the authentic device identifier may include an original MAC address of end device 130. In some embodiments, the connection request may include an authentication request for authenticated access point 120 to authenticate end device 130. Further, the authentication request may include a shared key between access point 120 and end device 130.

[0027] End device 130 may receive an approval of the connection request from access point 120. In some embodiments, the approval of the connection request may include an authentication response.

[0028] End device 130 may transmit an association request to access point 120 in response to the approval of the connection request and, in response to the association request, access point 120 may transmit an association response to end device 130. Then, end device 130 may connect to the wireless local area network provided by access point 120.

[0029] Fig. 3 shows an example flow diagram of a process 300 of an end device 130 for connecting to a wireless local area network, arranged in accordance with at least some embodiments described herein. The method in Fig. 3 may be implemented in the network communication environment including mobile operating server 110, access point 120 and end device 130, as illustrated in Fig. 1. An example process may include one or more operations, actions, or functions as illustrated by one or more blocks 310, 320, 330, 340, 350 and/or 360. Although illustrated as discrete blocks, various blocks may be divided into additional blocks, combined into fewer blocks, or eliminated, depending on the desired implementation. Processing may begin at block 310.

[0030] At block 310 (Transmit Probe Request Frame), end device 130 may transmit a probe request frame, which may include a fake device identifier (for example, a fake MAC address), to access point 120 for end device 130. By way of example, but not limitation, the fake device identifier may include at least one of a random number or a random character. Processing may proceed from block 310 to block 320.

[0031] At block 320 (Receive Probe Response Frame), end device 130 may receive a probe response frame from access point 120 as a response to the probe request frame. The probe response frame may include information regarding access point 120. By way of example, but not limitation, the

information regarding access point 120 may include a MAC address of access point 120 and/or an SSID of access point 120. Processing may proceed from block 320 to block 330.

[0032] At block 330 (Determine Whether Access Point is Authenticated Access Point), end device 130 may determine whether access point 120, which transmitted the probe response frame to end device 130, is an authenticated access point based at least in part on the information regarding access point 120 included in the probe response frame. In some embodiments, end device 130 may receive authenticated access point list 200, as illustrated in Fig. 2, from mobile operating server 110. Authenticated access point list 200 may include information regarding at least one authenticated access point.

[0033] At block 330, end device 130 may check whether the information regarding access point 120, which is included in the probe response frame, is included in authenticated access point list 200. If the information regarding access point 120 is included in authenticated access point list 200, end device 130 may recognize access point 120 as an authenticated access point. Processing may proceed from block 330 to block 340.

[0034] At block 340 (Transmit Connection Request), end device 130 may transmit a connection request including an authentic device identifier for end device 130 to access point 120 which is recognized as the authenticated access point at block 330. By way of example, but not limitation, the authentic device identifier may include an original MAC address of end device 130. Processing may proceed from block 340 to block 350.

[0035] At block 350 (Receive Approval of Connection Request), end device 130 may receive an approval of the connection request from access point 120. Processing may proceed from block 350 to block 360.

[0036] At block 360 (Connect to Wireless Local Area Network), end

device 130 may connect to a wireless local area network provided by access point 120. By way of example, but not limitation, the wireless local area network provided by access point 120 may include a Wi-Fi network.

[0037] One skilled in the art will appreciate that, for this and other processes and methods disclosed herein, the functions performed in the processes and methods may be implemented in differing order. Furthermore, the outlined steps and operations are only provided as examples, and some of the steps and operations may be optional, combined into fewer steps and operations, or expanded into additional steps and operations without detracting from the essence of the disclosed embodiments.

[0038] Fig. 4 shows a schematic block diagram illustrating an example architecture for an end device 130, arranged in accordance with at least some embodiments described herein. As depicted in Fig. 4, end device 130 may include a fake device identifier generating unit 410, a transmitting unit 420, a receiving unit 430, a determination unit 440, a memory 450, and a connecting unit 460. Although illustrated as discrete components, various components may be divided into additional components, combined into fewer components, or eliminated altogether while being contemplated within the scope of the disclosed subject matter.

[0039] Fake device identifier generating unit 410 may generate a fake device identifier (for example, a fake MAC address) for end device 130. By way of example, but not limitation, the fake device identifier may include a random number and/or a random character.

[0040] Transmitting unit 420 may transmit, to access point 120, a probe request frame which may include the fake device identifier generated by fake device identifier generating unit 410.

[0041] Receiving unit 430 may receive a probe response frame from

access point 120 to which the probe request frame is transmitted. The probe response frame may include information regarding access point 120. By way of example, but not limitation, the information regarding access point 120 may include a MAC address of access point 120 and/or an SSID of access point 120.

[0042] In some embodiments, receiving unit 430 may receive a fake device identifier (for example, a fake MAC address) for end device 130 from mobile operating server 110. In such cases, transmitting unit 420 may transmit, to access point 120, a probe request frame that includes the fake device identifier received from mobile operating server 110.

[0043] Determination unit 440 may determine whether access point 120, which transmitted the probe response frame to end device 130, is an authenticated access point based at least in part on the information regarding access point 120. In some embodiments, determination unit 440 may compare the information regarding access point 120, which is included in the probe response frame, and information regarding authenticated access points, which is included in authenticated access point list 200 as illustrated in Fig. 2. The information regarding the authenticated access points may include a MAC address and/or an SSID of each of the authenticated access points.

[0044] Determination unit 440 may determine whether the information regarding access point 120, which is included in the probe response frame, is included in authenticated access point list 200. If the information regarding access point 120 is included in authenticated access point list 200, end device 130 may recognize access point 120 as an authenticated access point.

[0045] Memory 450 may store authenticated access point list 200. In some embodiments, receiving unit 430 may receive authenticated access point list 200 from mobile operating server 110 and memory 450 may store the received authenticated access point list 200. Further, memory 450 may store the fake device identifier which is generated by fake device identifier generating unit

410 or received from mobile operating server 110.

[0046] Transmitting unit 420 may transmit a connection request, which includes an authentic device identifier, for end device 130 to access point 120 that is recognized as the authenticated access point by determination unit 440. By way of example, but not limitation, the authentic device identifier may include an original MAC address of end device 130.

[0047] Receiving unit 430 may receive an approval of the connection request from access point 120 and connecting unit 460 may connect to a wireless local area network provided by access point 120.

[0048] Fig. 5 illustrates computer program product 500 that may be utilized to provide a scheme for connecting to a wireless local area network, arranged in accordance with at least some embodiments described herein. Computer program product 500 may include a signal bearing medium 502. Signal bearing medium 502 may include one or more instructions 504 that, when executed by, for example, a processor, may provide the functionality described above with respect to Figs. 1-4. By way of example, instructions 504 may include: one or more instructions for transmitting a probe request frame including a fake device identifier (for example, a fake MAC address) of the end device to an access point, one or more instructions for receiving a probe response frame including information regarding the access point from the access point, one or more instructions for determining whether the access point is an authenticated access point based at least in part regarding the information regarding the access point, and one or more instructions for transmitting a connection request including an authentic device identifier of the end device to the access point. Thus, for example, referring to Fig. 4, end device 130 may undertake one or more of the blocks shown in Fig. 3 in response to instructions 504.

[0049] In some implementations, signal bearing medium 502 may encompass a computer-readable medium 506, such as, but not limited to, a

hard disk drive (HDD), a compact disk (CD), a digital versatile disk (DVD), a digital tape, memory, etc. In some implementations, signal bearing medium 502 may encompass a recordable medium 508, such as, but not limited to, memory, read/write (R/W) CDs, R/W DVDs, etc. In some implementations, signal bearing medium 502 may encompass a communications medium 510, such as, but not limited to, a digital and/or an analog communication medium (e.g., a fiber optic cable, a waveguide, a wired communication link, a wireless communication link, etc.). Thus, for example, computer program product 500 may be conveyed to one or more modules of mobile operating server 110 by an RF signal bearing medium 502, where the signal bearing medium 502 is conveyed by a wireless communications medium 510 (e.g., a wireless communications medium conforming with the IEEE 802.11 standard).

[0050] Fig. 6 is a block diagram illustrating an example computing device that may be utilized to provide a scheme for connecting to a wireless local area network, arranged in accordance with at least some embodiments described herein. In these examples, elements of computing device 600 may be arranged or configured for a mobile operating server or an end device. In a very basic configuration 602, computing device 600 typically includes one or more processors 604 and a system memory 606. A memory bus 608 may be used for communicating between processor 604 and system memory 606.

[0051] Depending on the desired configuration, processor 604 may be of any type including but not limited to a microprocessor (μ P), a microcontroller (μ C), a digital signal processor (DSP), or any combination thereof. Processor 604 may include one or more levels of caching, such as a level one cache 610 and a level two cache 612, a processor core 614, and registers 616. An example processor core 614 may include an arithmetic logic unit (ALU), a floating point unit (FPU), a digital signal processing core (DSP core), or any combination thereof. An example memory controller 618 may also be used with processor 604, or in some implementations memory controller 618 may be an internal part of processor 604.

[0052] Depending on the desired configuration, system memory 606 may be of any type including but not limited to volatile memory (such as RAM), non-volatile memory (such as ROM, flash memory, etc.) or any combination thereof. System memory 606 may include an operating system 620, one or more applications 622 (including instructions 626), and program data 624.

[0053] Computing device 600 may have additional features or functionality, and additional interfaces to facilitate communications between basic configuration 602 and any required devices and interfaces. For example, a bus/interface controller 630 may be used to facilitate communications between basic configuration 602 and one or more data storage devices 632 via a storage interface bus 634. Data storage devices 632 may be removable storage devices 636, non-removable storage devices 638, or a combination thereof. Examples of removable storage and non-removable storage devices include magnetic disk devices such as flexible disk drives and hard-disk drives (HDD), optical disk drives such as compact disk (CD) drives or digital versatile disk (DVD) drives, solid state drives (SSD), and tape drives to name a few. Example computer storage media may include volatile and non-volatile, removable and non-removable media implemented in any method or technology for storage of information, such as computer readable instructions, data structures, program modules, or other data.

[0054] System memory 606, removable storage devices 636 and non-removable storage devices 638 are examples of computer storage media. Computer storage media includes, but is not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CD-ROM, digital versatile disks (DVD) or other optical storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other medium which may be used to store the desired information and which may be accessed by computing device 600. Any such computer storage media may be part of computing device 600.

[0055] Computing device 600 may also include an interface bus 640 for

facilitating communication from various interface devices (e.g., output devices 642, peripheral interfaces 644, and communication devices 646) to basic configuration 602 via bus/interface controller 630. Example output devices 642 include a graphics processing unit 648 and an audio processing unit 650, which may be configured to communicate to various external devices such as a display or speakers via one or more A/V ports 652. Example peripheral interfaces 644 include a serial interface controller 654 or a parallel interface controller 656, which may be configured to communicate with external devices such as input devices (e.g., keyboard, mouse, pen, voice input device, touch input device, etc.) or other peripheral devices (e.g., printer, scanner, etc.) via one or more I/O ports 658. An example communication device 646 includes a network controller 660, which may be arranged to facilitate communications with one or more other computing devices 662 over a network communication link via one or more communication ports 664.

[0056] The network communication link may be one example of a communication media. Communication media may typically be embodied by computer readable instructions, data structures, program modules, or other data in a modulated data signal, such as a carrier wave or other transport mechanism, and may include any information delivery media. A “modulated data signal” may be a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media may include wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, radio frequency (RF), microwave, infrared (IR) and other wireless media. The term computer readable media as used herein may include both storage media and communication media.

[0057] Computing device 600 may be implemented as a portion of a small-form factor portable (or mobile) electronic device such as a cell phone, a personal data assistant (PDA), a personal media player device, a wireless web-watch device, a personal headset device, an application specific device, or a hybrid device that include any of the above functions. Computing device 600

may also be implemented as a personal computer including both laptop computer and non-laptop computer configurations.

[0058] The present disclosure is not to be limited in terms of the particular embodiments described in this application, which are intended as illustrations of various aspects. Many modifications and variations can be made without departing from its spirit and scope, as will be apparent to those skilled in the art. Functionally equivalent methods and apparatuses within the scope of the disclosure, in addition to those enumerated herein, will be apparent to those skilled in the art from the foregoing descriptions. Such modifications and variations are intended to fall within the scope of the appended claims. The present disclosure is to be limited only by the terms of the appended claims, along with the full scope of equivalents to which such claims are entitled. It is to be understood that this disclosure is not limited to particular methods, reagents, compounds, compositions or biological systems, which can, of course, vary. It is also to be understood that the terminology used herein is for the purpose of describing particular embodiments only, and is not intended to be limiting.

[0059] With respect to the use of substantially any plural and/or singular terms herein, those having skill in the art can translate from the plural to the singular and/or from the singular to the plural as is appropriate to the context and/or application. The various singular/plural permutations may be expressly set forth herein for sake of clarity.

[0060] It will be understood by those within the art that, in general, terms used herein, and especially in the appended claims (e.g., bodies of the appended claims) are generally intended as “open” terms (e.g., the term “including” should be interpreted as “including but not limited to,” the term “having” should be interpreted as “having at least,” the term “includes” should be interpreted as “includes but is not limited to,” etc.). It will be further understood by those within the art that if a specific number of an introduced claim recitation is intended, such an intent will be explicitly recited in the claim, and in the absence of such recitation, no such intent is present. For example, as an aid to

understanding, the following appended claims may contain usage of the introductory phrases “at least one” and “one or more” to introduce claim recitations. However, the use of such phrases should not be construed to imply that the introduction of a claim recitation by the indefinite articles “a” or “an” limits any particular claim containing such introduced claim recitation to embodiments containing only one such recitation, even when the same claim includes the introductory phrases “one or more” or “at least one” and indefinite articles such as “a” or “an” (e.g., “a” and/or “an” should be interpreted to mean “at least one” or “one or more”); the same holds true for the use of definite articles used to introduce claim recitations. In addition, even if a specific number of an introduced claim recitation is explicitly recited, those skilled in the art will recognize that such recitation should be interpreted to mean at least the recited number (e.g., the bare recitation of “two recitations,” without other modifiers, means at least two recitations, or two or more recitations). Furthermore, in those instances where a convention analogous to “at least one of A, B, and C, etc.” is used, in general, such a construction is intended in the sense one having skill in the art would understand the convention (e.g., “a system having at least one of A, B, and C” would include but not be limited to systems that have A alone, B alone, C alone, A and B together, A and C together, B and C together, and/or A, B, and C together, etc.). In those instances where a convention analogous to “at least one of A, B, or C, etc.” is used, in general, such a construction is intended in the sense one having skill in the art would understand the convention (e.g., “a system having at least one of A, B, or C” would include but not be limited to systems that have A alone, B alone, C alone, A and B together, A and C together, B and C together, and/or A, B, and C together, etc.). It will be further understood by those within the art that virtually any disjunctive word and/or phrase presenting two or more alternative terms, whether in the description, claims, or drawings, should be understood to contemplate the possibilities of including one of the terms, either of the terms, or both terms. For example, the phrase “A or B” will be understood to include the possibilities of “A” or “B” or “A and B.”

[0061] In addition, where features or aspects of the disclosure are

described in terms of Markush groups, those skilled in the art will recognize that the disclosure is also thereby described in terms of any individual member or subgroup of members of the Markush group.

[0062] As will be understood by one skilled in the art, for any and all purposes, such as in terms of providing a written description, all ranges disclosed herein also encompass any and all possible subranges and combinations of subranges thereof. Any listed range can be easily recognized as sufficiently describing and enabling the same range being broken down into at least equal halves, thirds, quarters, fifths, tenths, etc. As a non-limiting example, each range discussed herein can be readily broken down into a lower third, middle third and upper third, etc. As will also be understood by one skilled in the art all language such as “up to,” “at least,” and the like include the number recited and refer to ranges which can be subsequently broken down into subranges as discussed above. Finally, as will be understood by one skilled in the art, a range includes each individual member. Thus, for example, a group having 1-3 cells refers to groups having 1, 2, or 3 cells. Similarly, a group having 1-5 cells refers to groups having 1, 2, 3, 4, or 5 cells, and so forth.

[0063] From the foregoing, it will be appreciated that various embodiments of the present disclosure have been described herein for purposes of illustration, and that various modifications may be made without departing from the scope and spirit of the present disclosure. Accordingly, the various embodiments disclosed herein are not intended to be limiting, with the true scope and spirit being indicated by the following claims.

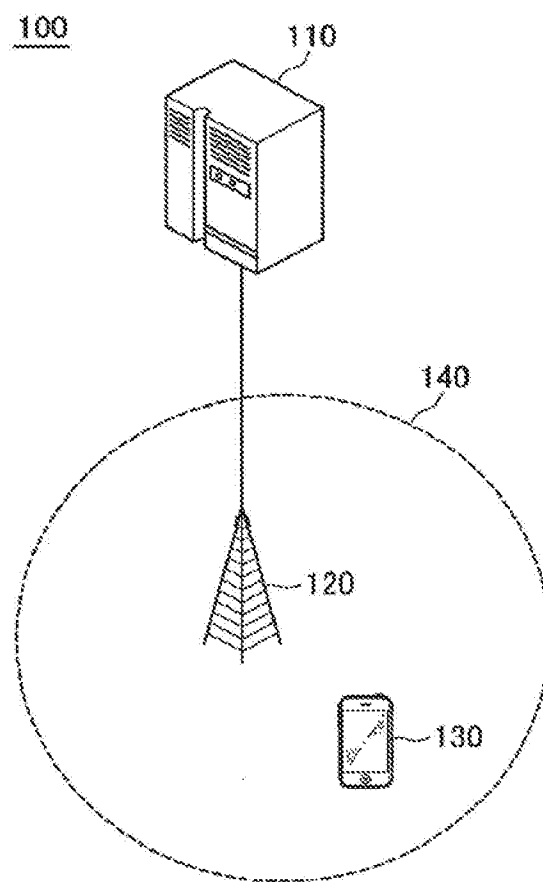
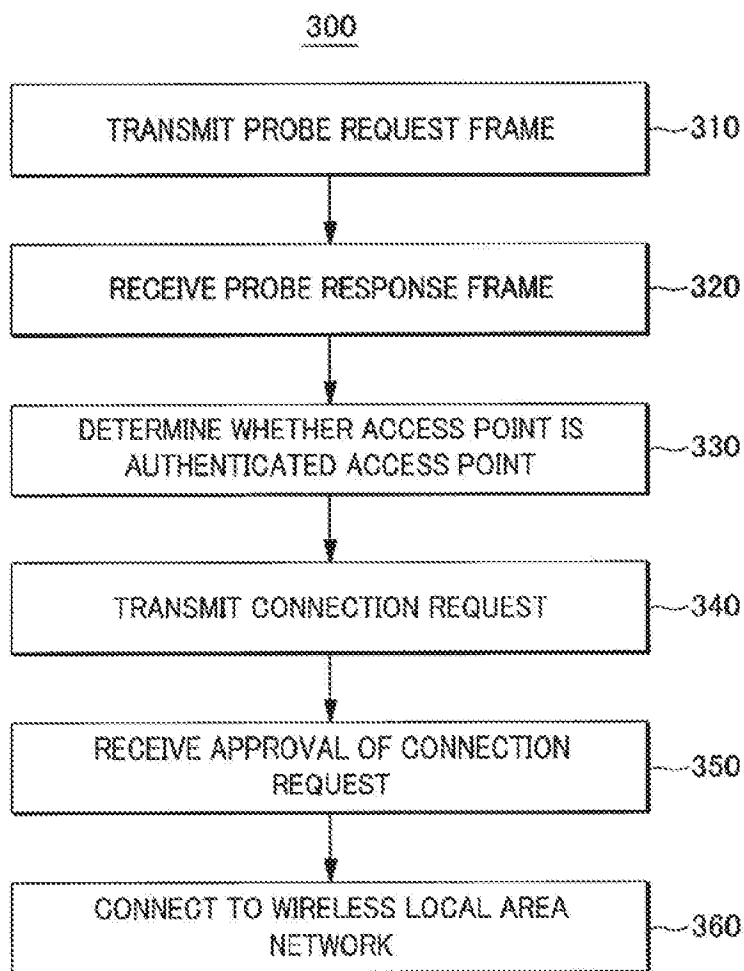


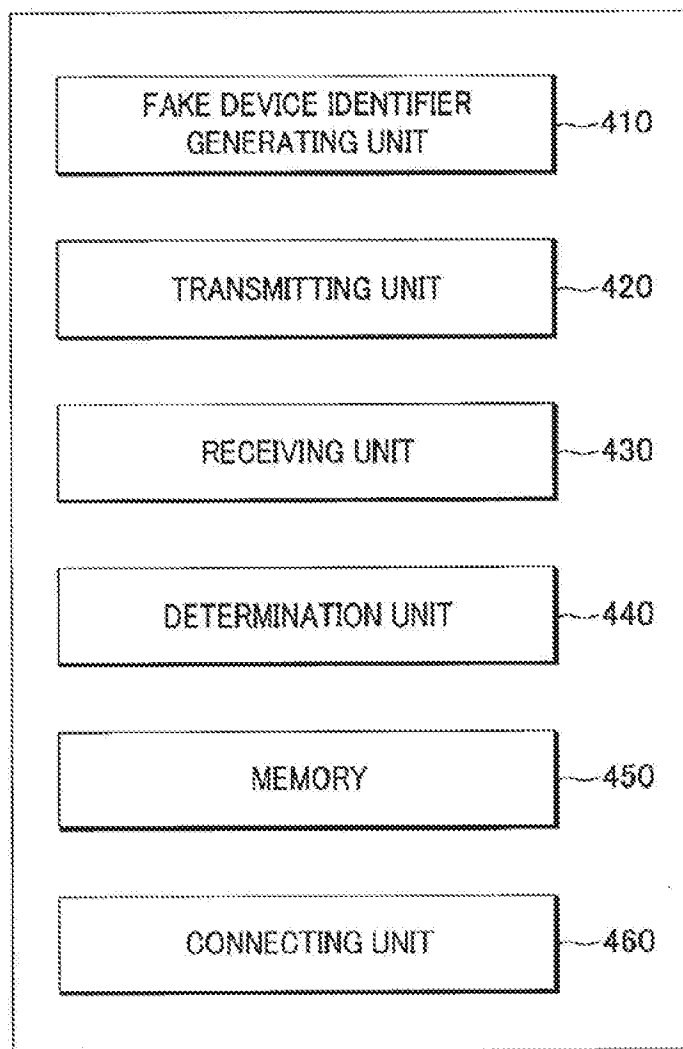
FIG. 1

200

ACCESS POINT	MAC ADDRESS	SSID
AUTHENTICATED ACCESS POINT 1	xxx111yyy	zzz
AUTHENTICATED ACCESS POINT 2	zzz222xxx	yyy
...	...	...

FIG. 2

*FIG. 3*

130*FIG. 4*

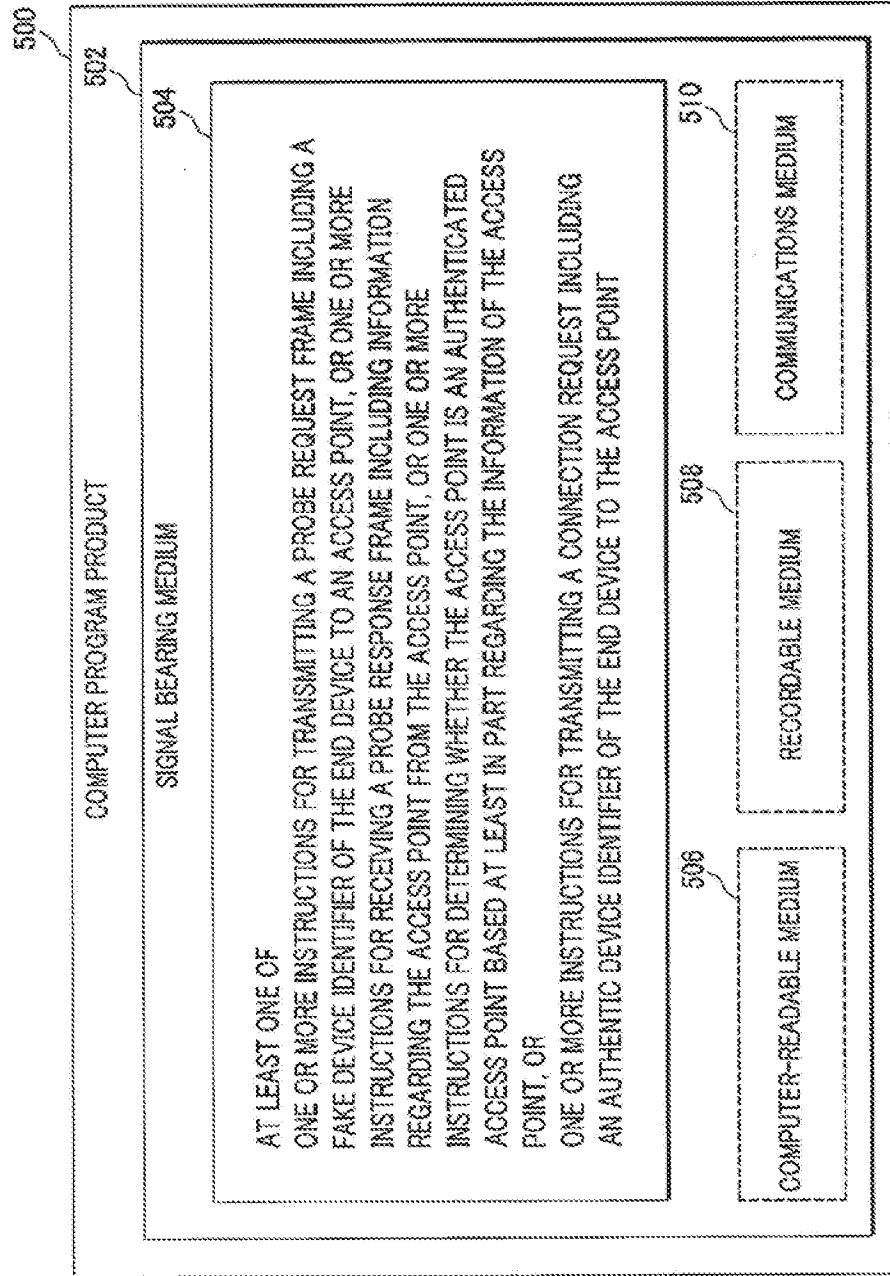


FIG. 5

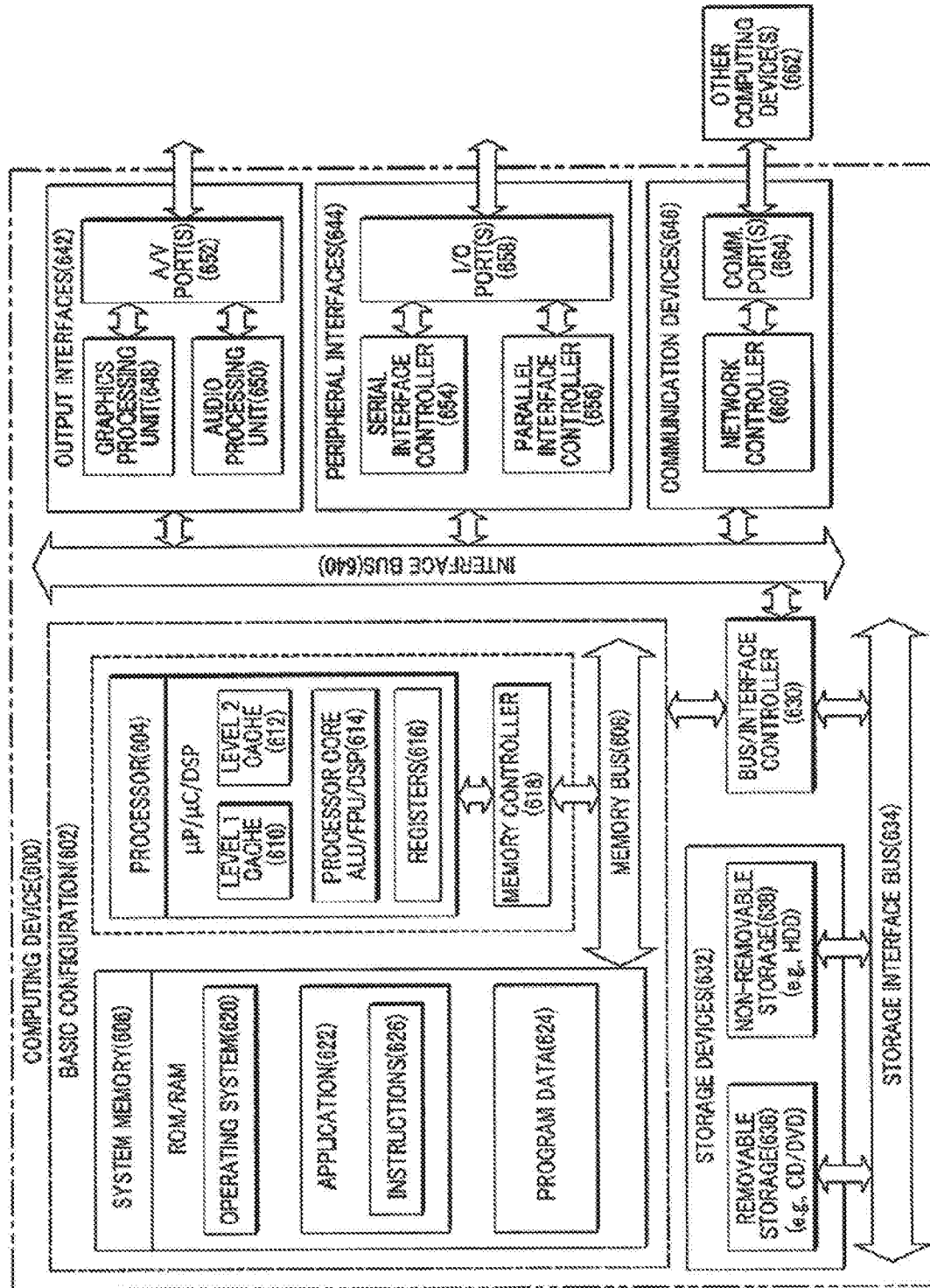
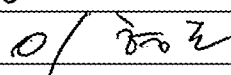


FIG. 6

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

Title of Invention	SCHEMES FOR CONNECTING TO WIRELESS NETWORK
As the below named inventor, I hereby declare that: This declaration is directed to: ☐ The attached application, or ☒ United States application or PCT international application number <u>PCT/US12/66306</u> filed on <u>11/21/2012</u> The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.	
LEGAL NAME OF INVENTOR Inventor: <u>Hyoung-Gon Lee</u> Date (Optional): <u>APR. 26, 2013</u> Signature: <u></u>	
Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.	

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

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