

of other network devices and to identify network device in the extended network providing the highest quality wireless connection for the wireless device.

4. (Original) The network device of claim 3, wherein the processor is further configured to initiate a wireless connection between the network device having the highest wireless connection quality and the wireless device.

5. (Original) The network device of claim 4, wherein the processor is further configured to initiate the wireless connection with the network device having the highest wireless connection quality based on a connection check between the network device and the wireless device.

6. (Original) The network device of claim 1, wherein the wireless connection quality information includes at least one of a wireless signal strength, a connection capability, a utilization status, a network topology, and a connection patch quality.

7. (Currently Amended) An extended network configured to implement an extended management function to identify a wireless access device providing a highest quality wireless connection to a wireless device, comprising:

a gateway device configured to enable communication between the extended network and an external network;

at least two wireless access devices in the extended network; and

at least one wireless device having a wireless connection to a least one of the wireless access devices,

wherein the gateway device and/or the wireless access devices include a processor executing the extended management function to identify the wireless access device providing the highest quality wireless connection based on wireless connection quality information ~~transmitted by or~~ exchanged among the wireless access devices and the gateway device.

8. (Original) The extended network of claim 7, wherein the extended network is configured in a tree topology including a gateway device as a root, one or more wireless access devices as nodes in the tree, and a wireless device as a leaf.

9. (Original) The extended network of claim 7, wherein each wireless access device is configured to generate wireless connection quality information for received packets from the wireless device in consideration and to transmit the wireless connection quality information to one or more wireless access devices in the extended network.

10. (Original) The extended network of claim 7, wherein at least one wireless access device is configured to initiate a connection between the wireless access device having the highest quality wireless connection for the wireless device and the wireless device.

11. (Original) The extended network of claim 10, wherein at least one wireless access device is further configured to initiate the connection to the wireless access device having the highest wireless connection quality based on a connection check between at least one the wireless device and the wireless device.

12. (Original) The extended network of claim 10, wherein the current wireless access device is further configured to check the connection quality for the wireless device on a periodic interval.

13. (Original) The extended network of claim 7, wherein the wireless connection quality includes at least one of a wireless signal strength, a noise level, a connection capability for a wireless device, a connection capability for a wireless access device, an extended network topology, a utilization status and a connection path quality.

14. (Original) The connection quality of claim 13, wherein the connection path quality for a wireless device is the connection quality between the wireless device and the gateway device.

15. (Original) The extended network of claim 10, wherein a first wireless access device is further configured to initiate the connection between the wireless access device having the highest wireless connection quality and the wireless device based on a connection check between at least one wireless access device and the wireless device, wherein the wireless access device having the highest wireless connection quality may be the first wireless access device.

16. (Currently Amended) A computer implemented method for identifying a wireless access device providing a highest quality wireless connection to a wireless device, comprising

receiving data at a plurality of wireless access devices in an extended network from a wireless device having a current wireless connection to a current wireless access device amongst the plurality of wireless access devices; and

generating wireless connection quality information at each wireless access device in the plurality of wireless access devices describing the quality of a wireless connection between the wireless device and the wireless access device generating the quality information;

transmitting the wireless connection quality information from the wireless access device to at least a gateway router communicating indirectly with the wireless device and communicating with a network external to the extended network.

17. (Original) The method of claim 16, further including transmitting or exchanging the wireless connection quality information from a wireless access device to/with other wireless access devices in the extended network.

18. (Original) The method of claim 17, wherein at least one wireless access device is configured to initiate a wireless connection between the wireless access device having the highest quality wireless connection for the wireless device and the wireless device.

19. (Original) The method of claim 18, wherein at least one wireless access device is further configured to initiate the wireless connection with the wireless device having the highest wireless connection quality based on a connection check between at least one wireless access device and the wireless device.

20. (Original) The method of claim 16, wherein the wireless connection quality includes at least one of a wireless signal strength, a noise level, a connection capability for a wireless device, a connection capability for a wireless access device, an extended network topology, a utilization status and a connection patch quality.

21. (Original) The method of claim 17, wherein a first wireless access device is further configured to initiate the wireless connection between the wireless access device having the highest wireless connection quality and the wireless device based on a connection check between at least one wireless access device and the wireless device., wherein the wireless access device having the highest wireless connection quality may be the first wireless access device.

REMARKS

This response is in response to the Non-Final Office Action mailed on June 9, 2015. Claims 1, 7 and 16 are currently being amended. No claims have been added or deleted. Accordingly, claims 1-21 are currently pending and are presented for review. Favorable reconsideration and allowance are requested in light of the foregoing amendments and the remarks which follow.

I. Interview Summary

Applicants conducted an interview with the Examiner on September 24, 2015, summarized by the Examiner in a summary mailed October 1, 2015. In that interview, Applicants discussed the differences between the present application and the cited prior art. The Examiner recognized the differences but felt that the claims did not adequately capture the differences. Potential amendments were discussed, but no consensus was reached.

II. Response

In the Office Action, the Examiner rejected claims 1-21 as being unpatentable over U.S. Patent Publication No. 2015/0043530, hereinafter "Bharghavan," in view of U.S. Patent Publication No. 2014/0241182, hereinafter "Smadi." Applicants have amended claims 1, 7, and 16 to clarify the differences between the present application and the cited art to expedite prosecution as also described in detail below.

Briefly described, the invention relates to providing a network connection between a network device and one of a plurality of wireless access devices in an extended network based on the detection of an alternative access point providing one or more advantages over a current access point. Extended networks have indirect communication paths that require communication between a plurality of wireless access devices to implement a communication path. In order to identify desirable wireless access devices in an extended network, sharing of connection quality information becomes desirable. Implementation of the invention uses sharing of wireless connection quality information between multiple devices, each of which may provide a wireless connection to a wireless device and/or wireless access devices.

In rejecting the claims over Bharghavan, the Examiner asserted that Bharghavan teaches "receiving packets from a wireless device." However, it is important to recognize that Bharghavan does not teach or suggest that the system coordinator is itself a gateway device that can itself provide a wireless connection and also, as recognized by the Examiner, does not connect to an external network. Accordingly, Bharghavan does not describe an implementation in an extended network. Using the system of Bharghavan, the system coordinator would not need to determine whether it is the best wireless access device based on either of a direct connection or an indirect connection through a wireless access device.

Claim 1 has been amended to specifically recite that the network device is a gateway router. Claim 1 has further been amended to recite that “the wireless connection quality information including wireless connection quality information for at least one indirect communication path” to emphasize that the present application is implemented in an extended network. Indirect communication paths require communication through multiple access points such as the wireless access points and/or the gateway router, prior to reaching the target destination.

In contrast, nothing in Bharghavan teaches or suggests that the system coordinator is a gateway router nor that the wireless connection quality information include information for indirect communication paths. This deficiency is not cured by Smadi. Accordingly, Bharghavan, even in combination with Smadi, does not teach or suggest all of the limitations of claim 1. Claims 2-6 depend from claim 1 and include all of the limitations thereof and are believed to be allowable for at least the same reasons as claim 1.

Claim 7 recites that the wireless connection quality information be exchanged among the wireless access devices and the gateway device. In order to determine desirable communication paths to a wireless device, wireless connection quality information must be exchanged between devices that can provide direct or indirect communication paths. For a wireless device, the connection quality provided by each node in the tree, including the root if it is a gateway wireless access device, is determined

by not only the node's signal strength to the device, the wireless capability of the node ... but also the connection quality between the node and the root. (Application, [00011], see FIGs 3A and 3B)

In contrast, nothing in Bharghavan teaches or suggests the wireless connection quality informatin is exchanged among the wireless access devices and the gateway device. Applicants assert that the one way transmission of informaiton from the system coordinator is not an exchange as recited in claim 7. This deficiency is not cured by Smadi. Accordingly, Bharghavan, even in combination with Smadi, does not teach or suggest all of the limitations of claim 7. Claims 8-15 depend from claim 7 and include all of the limitations thereof and are believed to be allowable for at least the same reasons as claim 7.

Claim 16 recites "transmitting the wireless connection quality information to at least a gateway router communicating indirectly with the wireless device and communicating with a network external to the extended network." Accordingly, claim 16 recites an indirect communication path not completed by the prior art as described above with reference to claim 1. Accordingly, Bharghavan, even in combination with Smadi, does not teach or suggest all of the limitations of claim 16. Claims 17-21 depend from claim 16 and include all of the limitations thereof and are believed to be allowable for at least the same reasons as claim 16.

CONCLUSION

For the foregoing reasons, withdrawal of all rejections and issuance of a Notice of Allowance are respectfully requested.

A fee in the amount of \$200 is believed due with this communication for a one-month extension for a large entity. The Director is authorized to direct payment of the \$200 fee to Deposit Account No. 50-1170. No other fee is believed due with this communication. Nevertheless, should the Examiner consider any fees to be payable in conjunction with this or any future communication, the Director is authorized to direct payment of such fees, or credit any overpayment, to Deposit Account No. 50-1170.

The Examiner is invited to contact the undersigned by telephone if it would help expedite matters.

Respectfully submitted,


Timothy E. Newholm
Registration No. 34,400

Date: October 9, 2015

Customer No.: 23598

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Electronic Patent Application Fee Transmittal

Application Number:	13974090			
Filing Date:	23-Aug-2013			
Title of Invention:	SYSTEM AND METHOD FOR CONFIGURING DEVICE CONNECTIONS IN AN EXTENDED NETWORK ENVIRONMENT			
First Named Inventor/Applicant Name:	Yu-Te Lin			
Filer:	Timothy E Newholm/Nicole Bey			
Attorney Docket Number:	2188.047			
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 1 month with \$0 paid	1251	1	200	200
Miscellaneous:				
Total in USD (\$)				200

Electronic Acknowledgement Receipt

EFS ID:	23739903
Application Number:	13974090
International Application Number:	
Confirmation Number:	4517
Title of Invention:	SYSTEM AND METHOD FOR CONFIGURING DEVICE CONNECTIONS IN AN EXTENDED NETWORK ENVIRONMENT
First Named Inventor/Applicant Name:	Yu-Te Lin
Customer Number:	23598
Filer:	Timothy E Newholm/Nicole Bey
Filer Authorized By:	Timothy E Newholm
Attorney Docket Number:	2188,047
Receipt Date:	09-OCT-2015
Filing Date:	23-AUG-2013
Time Stamp:	10:37:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 200
RAM confirmation Number	8060
Deposit Account	501170
Authorized User	NEWHOLM, TIMOTHY E

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

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

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TP Link Ex. 1004

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		00893298.PDF	3467249 f14b9a3ae311551b564995c1798767e3e4b1f236	yes	11
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	11	

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	31056 7201dba222011e91c110a9d435e94162601a12	no	2
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Warnings:

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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 displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/974,090	Filing Date 08/23/2013	☐ To be Mailed
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ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO**APPLICATION AS FILED – PART I**

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE (\$)	FEE (\$)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(l))	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =	
☐ 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

AMENDMENT	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	10/09/2015	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total (37 CFR 1.16(i))	- 21	Minus: ** 21	= 0	X \$80 =	0
	Independent (37 CFR 1.16(h))	- 3	Minus: *** 3	= 0	X \$420 =	0
	☐ Application Size Fee (37 CFR 1.16(s))					
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					
TOTAL ADD'L FEE						0

AMENDMENT	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total (37 CFR 1.16(i))	-	Minus: **	=	X \$ =	
	Independent (37 CFR 1.16(h))	-	Minus: ***	=	X \$ =	
	☐ 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.

** 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 number found in the appropriate box in column 1.

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/KIM DOWNING/

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

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/974,090	08/23/2013	Yu-Te Lin	2188.047	4517
23598 7590 02/19/2016 BOYLE FREDRICKSON S.C. 840 North Plankinton Avenue MILWAUKEE, WI 53203			EXAMINER HAILE, AWET A	
			ART UNIT 2474	PAPER NUMBER
			NOTIFICATION DATE 02/19/2016	DELIVERY MODE 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):

docketing@boylefred.com

Office Action Summary

Application No.
13/974,090

Applicant(s)
LIN ET AL.

Examiner
AWET HAILE

Art Unit
2474

AIA (First Inventor to File)
Status
Yes

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

Period for Reply

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

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

Status

- 1) ☒ Responsive to communication(s) filed on 10/09/2015.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 1-21 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) _____ is/are allowed.
- 7) ☒ Claim(s) 1-21 is/are rejected.
- 8) ☐ Claim(s) _____ is/are objected to.
- 9) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

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

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

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

Certified copies:

- a) ☐ All b) ☐ Some** c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

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

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 4) ☐ Other: _____

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DETAILED ACTION

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

Response to Arguments

2. Applicant's arguments with respect to claims 1-21 have been considered but are moot because the arguments do not apply to the combination of the references being used in the current rejection.

Claim Objections

3. **Claims 7-15** are objected to because of the following informalities.

For Claim 17 the occurrence of "a least one of the wireless access devices" in lines 7-8, seems a typo error, if this is true, it is suggested to applicant to change " a least one of the wireless access devices "to "at least one of the wireless access devices "

Claims 18-15 are objected as being dependent of objected claim.

Claim Rejections - 35 USC § 103

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

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

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims the examiner presumes that the subject matter of the various claims was commonly owned as of the effective filing date of the claimed invention(s) absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and effective filing dates of each claim that was not commonly owned as of the effective filing date of the later invention in order for the examiner to consider the applicability of 35 U.S.C. 102(b) (2) (C) for any potential 35 U.S.C. 102(a) (2) prior art against the later invention.

7. **Claims 1-21** are rejected under 35 U.S.C. 103 as being unpatentable over Bharghavan et al (US 2015/0043530 A1) in view of Piipponen et al(US 2008/0205317 A1).

Regarding claims 1, Bharghavan '530 teaches, facilitate wireless connection management in an extended wireless network (see para 24, 38-44 and Figs.1-3, i.e., the coordinator 260 for wireless connection management) comprising: a network device input connected at least indirectly to an internal network and configured to communicate a plurality of data packets to and from at least one computer system(see para 23-25 and Figs. 1-2, i.e., system coordinator communicating to and from the AP's); and a computer processor configured to execute steps, including receiving packets from a wireless device(see para 41-44 and Figs. 1-3, i.e., each of the AP and the coordinator receiving messages from the wireless devices), identifying the wireless device within a table of wireless devices connected to a wireless access device in an extended wireless network (see para 38-44 and Figs. 1-3, i.e., each of the AP's and coordinator 260 comprising the data structure and identifying each of the wireless devices) , generating wireless connection quality information for the wireless device specific to the wireless access device(see para 38-44 and Figs. 1-3, i.e., based on message received form the

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wireless device determining signal quality for each of wireless device to AP communication), the wireless connection quality information including wireless connection quality information for at least one indirect communication path(see para 40, 43, 44 and Figs. 1-2, i.e., the coordinator monitoring indirect communication paths(e.g., communication path between AP 210 and wireless device 240)).

Bharghavan '530 does not explicitly teach, gateway router, a network device output connected at least indirectly to an external network and configured to communicate the plurality of data packets to and from at least one computer system.

Piipponen '317 teaches, gateway router (see Fig. 1, gateway 101), a network device output connected at least indirectly to an external network and configured to communicate the plurality of data packets to and from at least one computer system (see para 27, 28 and Fig. 1, i.e., Gateway 101 communicating with external network (internet) and indirectly communicating with communication device 120 via AP 103).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was filed to incorporate, the teaching of Piipponen '317, into the communication system of Bharghavan '530, since such modification would provide flexibility of a WLAN environment that enables flexible establishment of low power connections between a wireless communication terminal belonging to a short-range wireless network and an external wireless communication device not belonging to the network, as suggested by Piipponen '317(see para 11-12).

Regarding claim 2, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein the computer processor is further configured to transmit the wireless connection quality information to other wireless access devices in the extended network(see Bharghavan '530, para 40-44 and Fig.2-3, i.e., each of the AP receiving data structure 270).

Regarding claim 3, the combination of Bharghavan '530 and Piipponen '317 teaches wherein the computer processor is further configured to receive wireless connection quality information from a plurality of other network devices and to identify network device in the extended network providing the highest quality wireless connection for the wireless device(see Bharghavan '530, para 38-44 and Figs. 1-3, based on information transmitted from the APs to the coordinator and the information shared between each of the APs via the coordinator 260 determining the best quality providing AP).

Regarding claim 4, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein the processor is further configured to initiate a wireless connection between the network device having the highest wireless connection quality and the wireless device (see Bharghavan '530, para 40-41, 48 and Figs. 1-3, i.e., initiating handoff procedure to the AP with highest quality).

Regarding claim 5, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein the processor is further configured to initiate the wireless connection with the network device having the highest wireless connection quality based on a connection check between the network device and the wireless device (see Bharghavan '530, para 40-41, 48 and Figs. 1-3, i.e., initiating handoff procedure to the AP with highest quality).

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Regarding claim 6, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein the wireless connection quality information includes at least one of a wireless signal strength, a connection capability, a utilization status, a network topology, and a connection patch quality(see Bharghavan '530, para 24, 40, 44 and Figs. 1-3, i.e., determining connection quality based on signal strength).

Regarding claim 7, Bharghavan '530 teaches, an extended network configured to implement an extended management function to identify a wireless access device providing a highest quality wireless connection to a wireless device(see para 24, 38-44 and Figs. 1-3, method and system for determining the highest QoS providing AP), comprising: at least two wireless access devices in the extended network(see para 31-36 and Figs. 1-3, i.e., multiple APs); and at least one wireless device having a wireless connection to a least one of the wireless access devices(see para 38-44 and Figs. 1-3, i.e., wireless device 240 having connection to the AP), wherein the gateway device and wireless access devices include a processor executing the extended management function to identify the wireless access device providing the highest quality wireless connection based on wireless connection quality information exchanged among the wireless access devices and the gateway device(see para 38-44 and Figs. 1-3, based on information transmitted from the APs to the coordinator and the information shared between each of the APs via the coordinator 260 determining the best quality providing AP).

Bharghavan '530 does not explicitly teach, a gateway device configured to enable communication between the extended network and an external network.

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Piipponen '317 teaches, a gateway device (see Fig. 1, gateway 101), configured to enable communication between the extended network and an external network (see para 27, 28 and Fig. 1, i.e., Gateway 101 communicating with external network (internet) and indirectly communicating with communication device 120 via AP 103).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was filed to incorporate, the teaching of Piipponen '317, into the communication system of Bharghavan '530, since such modification would provide flexibility of a WLAN environment that enables flexible establishment of low power connections between a wireless communication terminal belonging to a short-range wireless network and an external wireless communication device not belonging to the network, as suggested by Piipponen '317(see para 11-12).

Regarding claim 8, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein the extended network is configured in a tree topology including a gateway device as a root, one or more wireless access devices as nodes in the tree, and a wireless device as a leaf (see Bharghavan '530, para 24, 27, 31-34 and Fig. 2, i.e., the system coordinator, APs and wireless devices as shown in Fig. 2).

Regarding claim 9, the combination of Bharghavan '530 and Piipponen '317 teaches,, wherein each wireless access device is configured to generate wireless connection quality information for received packets from the wireless device in consideration and to transmit the wireless connection quality information to one or more wireless access devices in the extended network (see Bharghavan '530, para 38-44 and Figs. 1-3, each of the APs generating quality

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information based on messages received from the wireless device and transmitting the quality information to other AP/coordinator).

Regarding claim 10, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein at least one wireless access device is configured to initiate a connection between the wireless access device having the highest quality wireless connection for the wireless device and the wireless device (see Bharghavan '530, para 40-41, 48 and Figs. 1-3, i.e., initiating handoff procedure to the AP with highest quality).

Regarding claim 11, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein at least one wireless access device is further configured to initiate the connection to the wireless access device having the highest wireless connection quality based on a connection check between at least one the wireless device and the wireless device (see Bharghavan '530, para 40-41, 48 and Figs. 1-3, i.e., initiating handoff procedure to the AP with highest quality).

Regarding claim 12, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein the current wireless access device is further configured to check the connection quality for the wireless device on a periodic interval (see Bharghavan '530, 101, 102, periodically checking connection quality).

Regarding claim 13, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein the wireless connection quality includes at least one of a wireless signal strength, a noise level, a connection capability for a wireless device, a connection capability for a wireless access device, an extended network topology, a utilization status and a connection path quality (see Bharghavan '530, para 24, 40, 44 and Figs. 1-3, i.e., determining connection quality based on signal strength).

Regarding claim 14, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein the connection path quality for a wireless device is the connection quality between the wireless device and the gateway device(see Bharghavan '530, para 24, 40, 44 and Figs. 1-3, i.e., determining connection quality based on signal strength).

Regarding claim 15, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein a first wireless access device is further configured to initiate the connection between the wireless access device having the highest wireless connection quality and the wireless device based on a connection check between at least one wireless access device and the wireless device, wherein the wireless access device having the highest wireless connection quality may be the first wireless access device(see Bharghavan'530, para 40-41, 48 and Figs. 1-3, i.e., initiating handoff procedure to the AP with highest quality).

Regarding claim 16, Bharghavan '530 teaches, a computer implemented method for identifying a wireless access device providing a highest quality wireless connection to a wireless device (see para 38-44 and Figs. 1-3, i.e., coordinator determining wireless connection quality between APs and communication device), comprising receiving data at a plurality of wireless access devices in an extended network from a wireless device having a current wireless connection to a current wireless access device amongst the plurality of wireless access devices(see para 41-44 and Figs. 1-3, i.e., each of the AP and the coordinator receiving messages from the wireless devices);and generating wireless connection quality information at each wireless access device in the plurality of wireless access devices describing the quality of a wireless connection between the wireless device and the wireless access device generating the quality information(see para 38-44 and Figs. 1-3, i.e., based on message received form the wireless

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device determining signal quality for each of wireless device to AP communication); transmitting the wireless connection quality information from the wireless access device(see para 41-44 and Figs. 1-3, i.e., each of the APs communicating the connection quality/signal strength between the AP and communication device to the coordinator), communicating indirectly with the wireless device(see para 41-44 and Figs. 1-3, i.e., the coordinator is connected to the communication device indirectly/via the APs).

Bharghavan '530 does not explicitly teach, at least a gateway router, communicating with a network external to the extended network.

Piipponen '317 teaches, at least a gateway router(see Fig. 1, gateway 101), communicating with a network external to the extended network(see para 27, 28 and Fig. 1, i.e., Gateway 101 communicating with external network (internet) and indirectly communicating with communication device 120 via AP 103).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was filed to incorporate, the teaching of Piipponen '317, into the communication system of Bharghavan '530, since such modification would provide flexibility of a WLAN environment that enables flexible establishment of low power connections between a wireless communication terminal belonging to a short-range wireless network and an external wireless communication device not belonging to the network, as suggested by Piipponen '317(see para 11-12).

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Regarding claim 17, the combination of Bharghavan '530 and Piipponen '317 teaches, further including transmitting or exchanging the wireless connection quality information from a wireless access device to/with other wireless access devices in the extended network (see Bharghavan '530, para 38-44 and Figs. 1-3, each of the APs generating quality information based on messages received from the wireless device and transmitting the quality information to other AP/coordinator).

Regarding claim 18, the combination of Bharghavan '530 and Piipponen '317 teaches,, wherein at least one wireless access device is configured to initiate a wireless connection between the wireless access device having the highest quality wireless connection for the wireless device and the wireless device (see Bharghavan '530, para 40-41, 48 and Figs. 1-3, i.e., initiating handoff procedure to the AP with highest quality).

Regarding claim 19, the combination of Bharghavan '530 and Piipponen '317 teaches,, wherein at least one wireless access device is further configured to initiate the wireless connection with the wireless device having the highest wireless connection quality based on a connection check between at least one wireless access device and the wireless device (see Bharghavan '530, para 40-41, 48 and Figs. 1-3, i.e., initiating handoff procedure to the AP with highest).

Regarding claim 20, the combination of Bharghavan '530 and Piipponen '317 teaches, wherein the wireless connection quality includes at least one of a wireless signal strength, a noise level, a connection capability for a wireless device, a connection capability for a wireless access device, an extended network topology, a utilization status and a connection patch quality (see

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Bharghavan '530, para 24, 40, 44 and Figs. 1-3, i.e., determining connection quality based on signal strength).

Regarding claim 21, the combination of Bharghavan '530 and Piipponen '317 teaches,, wherein a first wireless access device is further configured to initiate the wireless connection between the wireless access device having the highest wireless connection quality and the wireless device based on a connection check between at least one wireless access device and the wireless device., wherein the wireless access device having the highest wireless connection quality may be the first wireless access device(see Bharghavan '530, para 40-41, 48 and Figs. 1-3, i.e., initiating handoff procedure to the AP with highest quality).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Awet Haile whose telephone number is (571)270-3114. The examiner can normally be reached on Monday through Friday 8:30 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Thier can be reached on (571) 272-2832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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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.

/AWET HAILE/

Primary Examiner, Art Unit 2474

Notice of References Cited	Application/Control No. 13/974,090	Applicant(s)/Patent Under Reexamination LIN ET AL.	
	Examiner AWET HAILE	Art Unit 2474	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-2008/0205317 A1	08-2008	Piipponen; Antti	H04L12/2602	370/311
	B	US-				
	C	US-				
	D	US-				
	E	US-				
	F	US-				
	G	US-				
	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

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

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

Search Notes 	Application/Control No. 13974090	Applicant(s)/Patent Under Reexamination LIN ET AL.
	Examiner AWET HAILE	Art Unit 2474

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
NPL search(Google and IP.com)	5/29/2015	A.H
East CPC text search(H04W24/10, H04W76/02)	5/29/2015	A.H
Inventor search(edan and east)	5/29/2015	A.H
East CPC text search(H04W24/10, H04W76/02) updated	2/11/2016	A.H
Inventor search(edan and east)	2/11/2016	A.H

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S69	145	S68 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:41
S68	148	(gateway near2 router) with (external or internet) with (wifi or WLAN)	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:41
S67	258	(gateway near2 router) with (external or internet) same (wifi or WLAN)	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:41
S66	330	S64 and (repeater or extende\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:18
S65	330	S64 and(repeater or extende\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:18
S64	883	S63 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:18
S63	905	(router or gateway) same (wifi or WLAN) same (handoff or handover)	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:18
S62	0	(router or gateway) same (wifi or WLAN) same(repeater) same (handoff or handover)	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:17
S61	0	(router or gateway) same (wifi or WLAN) with (repeater) same (handoff	US-PGPUB; USPAT;	OR	ON	2016/02/10 08:17

		or handover)	USOCR; FPRS; EPO; DERWENT			
S60	536	S59 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:10
S59	571	(router or gateway) same (wifi or WLAN) with (repeater)	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:10
S58	731	S57 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:09
S57	778	(router or gateway) same (wifi or WLAN) with (repeater or extende\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:09
S56	4171	(wifi or WLAN) with (repeater or extende\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:09
S55	3390727	(wifi or WLAN) with repeater or extende\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:08
S54	252	S53 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 07:58
S53	268	S50 and S52	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 07:58
S52	4431	extend\$4 with (wifi or WLAN)	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 07:57
S51	148372	extend\$4 with wifi or WLAN	US-PGPUB; USPAT;	OR	ON	2016/02/10 07:57

			USOCR; FPRS; EPO; DERWENT			
S50	38835	gateway near2 router	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 07:57
S49	463	S39 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/09 14:12
S48	5	S44 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/09 14:11
S47	81	S46 and (@ad<="20011010" @pd<="20011010" @rlad<="20011010" @prad<="20011010")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/09 13:34
S46	229	(amount or quant\$4) with ((dummy or pad\$3) near2 (data or bit)) with process\$4	US-PGPUB; USPAT	OR	ON	2016/02/09 13:34
S45	5	S44 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/09 12:20
S44	5	((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff) with extend\$4	US-PGPUB; USPAT	OR	ON	2016/02/09 12:20
S43	81	S42 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/09 12:19
S42	88	extended adj wireless adj network	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	OFF	2016/02/09 12:19
S41	6	((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with	US-PGPUB; USPAT	OR	ON	2016/02/09 12:19

		(Handover or handoff) and extend\$4 with wifi				
S40	463	S39 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/09 09:21
S39	476	((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff)	US-PGPUB; USPAT	OR	ON	2016/02/09 09:21
S38	1	"13974090"	US-PGPUB; USPAT	OR	ON	2016/02/09 07:55
S37	6	(S34 S35 S36) and (((Access near point) or AP or (Access near2 device) or BS or BSS or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service))).clm.	US-PGPUB; USPAT	OR	ON	2016/02/09 07:26
S36	36	((Pramod) near2 (Viswanath)).INV.	US-PGPUB; USPAT	OR	OFF	2016/02/09 07:26
S35	973	((Junyi) near2 (Li)).INV.	US-PGPUB; USPAT	OR	OFF	2016/02/09 07:26
S34	159	((Xinzhou) near2 (Wu)).INV.	USPAT; USOCR	OR	OFF	2016/02/09 07:26
S33	1	"13974090"	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2015/12/31 08:47
S32	1	"13974090"	US-PGPUB; USPAT	OR	ON	2015/05/31 11:27

EAST Search History (Interference)

< This search history is empty >

2/ 10/ 2016 9:46:03 AM**C:\ Users\ ahaile1\ Documents\ EAST\ Workspaces\ 13974090.wsp**

<i>Index of Claims</i> 	Application/Control No. 13974090	Applicant(s)/Patent Under Reexamination LIN ET AL.
	Examiner AWET HAILE	Art Unit 2474

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

☐ Claims renumbered in the same order as presented by applicant				☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE							
Final	Original	05/29/2015	02/11/2016						
	1	✓	✓						
	2	✓	✓						
	3	✓	✓						
	4	✓	✓						
	5	✓	✓						
	6	✓	✓						
	7	✓	✓						
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	16	✓	✓						
	17	✓	✓						
	18	✓	✓						
	19	✓	✓						
	20	✓	✓						
	21	✓	✓						

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Application	Document	Mailroom Date	Attorney Docket No.
13974090	CTFR	02/19/2016	2188.047
	892	02/19/2016	2188.047

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/974,090	08/23/2013	Yu-Te Lin	2188.047	4517
23598 7590 04/15/2016 BOYLE FREDRICKSON S.C. 840 North Plankinton Avenue MILWAUKEE, WI 53203			EXAMINER HAILE, AWET A	
			ART UNIT 2474	PAPER NUMBER
			NOTIFICATION DATE 04/15/2016	DELIVERY MODE 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):

docketing@boylefred.com

<i>Applicant-Initiated Interview Summary</i>	Application No.	Applicant(s)	
	13/974,090	LIN ET AL.	
	Examiner	Art Unit	
	AWET HAILE	2474	

All participants (applicant, applicant's representative, PTO personnel):

(1) AWET HAILE (3) _____

(2) Michael Braver(Reg. No. 51495) (4) _____

Date of Interview: 11 April 2016.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.

If Yes, brief description: _____

Issues Discussed ☐101 ☐112 ☐102 ☒103 ☐Others

(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1.

Identification of prior art discussed: Bharghavan et al (US 2015/0043530 A1).

Substance of Interview

(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The difference between the prior art and claimed invention was discussed, in particular claim 1 limitation ""the wireless connection quality information including wireless connection quality information for at least one indirect communication path ..."" was discussed, possible amendment to the claims that clarifies the indirect communication path similar to Fig. 3 was discussed. No agreement was reached as a result of the interview.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

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

☐ Attachment

/AWET HAILE/
Primary Examiner, Art Unit 2474

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135 (35 U.S.C. 132).

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner.
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

To: docketing@boylefred.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 23598

Apr 15, 2016 05:41:24 AM

Dear PAIR Customer:

BOYLE FREDRICKSON S.C.
840 North Plankinton Avenue
MILWAUKEE, WI 53203
UNITED STATES

The following USPTO patent application(s) associated with your Customer Number, 23598 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

Disclaimer:

The list of documents shown below is provided as a courtesy and is not part of the official file wrapper. The content of the images shown in PAIR is the official record.

Application	Document	Mailroom Date	Attorney Docket No.
13974090	INTV.SUM.APP	04/15/2016	2188.047

To view your correspondence online or update your email addresses, please visit us anytime at <https://portal.uspto.gov/secure/myportal/privatepair>.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL (Submitted Only via EFS-Web)

Application Number	13/974,090	Filing Date	2013-08-23	Docket Number (if applicable)	2188.047	Art Unit	2474
First Named Inventor	Lin et al.			Examiner Name	Haile, Awet		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application. Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, to any international application that does not comply with the requirements of 35 U.S.C. 371, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV.

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 501170

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-14)

Approved for use through 07/31/2016. OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

Signature of Registered U.S. Patent Practitioner			
Signature	/Timothy E. Newholm/	Date (YYYY-MM-DD)	2016-05-19
Name	Timothy E. Newholm	Registration Number	34400

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.:	13/974,090	Examiner: Haile, Awet
Filing Date:	Aug. 23, 2013	Group Art Unit: 2474
Inventor:	Lin, et al.	Attorney Docket No.: 2188.047
Confirmation No.:	4517	Customer Account No.: 23598
Title:	<i>System and Method for Configuring Device Connections in an Extended Network Environment</i>	

RESPONSE TO FINAL OFFICE ACTION MAILED FEBRUARY 19, 2016

Mail Stop Amendment
Commissioner for Patents
Post Office Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This amendment is being submitted in response to the Final Office Action mailed February 19, 2016. This response is being filed with a Request for Continued Examination (RCE).

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

Remarks begin on page 7 of this paper.

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all previous listings of claims in the present application.

1. (Currently Amended) A gateway router configured to facilitate wireless connection management in an extended wireless network, comprising:
 - a network device input connected at least indirectly to an internal network and configured to communicate a plurality of data packets to and from at least one computer system;
 - a network device output connected at least indirectly to an external network and configured to communicate the plurality of data packets to and from at least one computer system; and
 - a computer processor configured to execute steps, including
 - receiving packets from a wireless device,
 - identifying the wireless device within a table of wireless devices connected to a wireless access device in an extended wireless network,
 - generating wireless connection quality information for the wireless device specific to the wireless access device, the wireless connection quality information including wireless connection quality information for at least one indirect communication path having at least one network extender device to establish the communication path between the gateway router and the wireless access device.
2. (Original) The network device of claim 1, wherein the computer processor is further configured to transmit the wireless connection quality information to other wireless access devices in the extended network.

3. (Original) The network device of claim 1, wherein the computer processor is further configured to receive wireless connection quality information from a plurality of other network devices and to identify network device in the extended network providing the highest quality wireless connection for the wireless device.

4. (Original) The network device of claim 3, wherein the processor is further configured to initiate a wireless connection between the network device having the highest wireless connection quality and the wireless device.

5. (Original) The network device of claim 4, wherein the processor is further configured to initiate the wireless connection with the network device having the highest wireless connection quality based on a connection check between the network device and the wireless device.

6. (Original) The network device of claim 1, wherein the wireless connection quality information includes at least one of a wireless signal strength, a connection capability, a utilization status, a network topology, and a connection patch quality.

7. (Previously Presented) An extended network configured to implement an extended management function to identify a wireless access device providing a highest quality wireless connection to a wireless device, comprising:

a gateway device configured to enable communication between the extended network and an external network;

at least two wireless access devices in the extended network; and

at least one wireless device having a wireless connection to a least one of the wireless access devices,

wherein the gateway device and the wireless access devices include a processor executing the extended management function to identify the wireless access device providing the highest quality wireless connection based on wireless

connection quality information exchanged among the wireless access devices and the gateway device.

8. (Original) The extended network of claim 7, wherein the extended network is configured in a tree topology including a gateway device as a root, one or more wireless access devices as nodes in the tree, and a wireless device as a leaf.

9. (Original) The extended network of claim 7, wherein each wireless access device is configured to generate wireless connection quality information for received packets from the wireless device in consideration and to transmit the wireless connection quality information to one or more wireless access devices in the extended network.

10. (Original) The extended network of claim 7, wherein at least one wireless access device is configured to initiate a connection between the wireless access device having the highest quality wireless connection for the wireless device and the wireless device.

11. (Original) The extended network of claim 10, wherein at least one wireless access device is further configured to initiate the connection to the wireless access device having the highest wireless connection quality based on a connection check between at least one the wireless device and the wireless device.

12. (Original) The extended network of claim 10, wherein the current wireless access device is further configured to check the connection quality for the wireless device on a periodic interval.

13. (Original) The extended network of claim 7, wherein the wireless connection quality includes at least one of a wireless signal strength, a noise level, a connection capability for a wireless device, a connection capability for a wireless access device, an extended network topology, a utilization status and a connection path quality.

14. (Original) The connection quality of claim 13, wherein the connection path quality for a wireless device is the connection quality between the wireless device and the gateway device.

15. (Original) The extended network of claim 10, wherein a first wireless access device is further configured to initiate the connection between the wireless access device having the highest wireless connection quality and the wireless device based on a connection check between at least one wireless access device and the wireless device, wherein the wireless access device having the highest wireless connection quality may be the first wireless access device.

16. (Currently Amended) A computer implemented method for identifying a wireless access device providing a highest quality wireless connection to a wireless device, comprising

receiving data at a plurality of wireless access devices in an extended network from a wireless device having a current wireless connection to a current wireless access device amongst the plurality of wireless access devices; and
generating wireless connection quality information at each wireless access device in the plurality of wireless access devices describing the quality of a wireless connection between the wireless device and the wireless access device generating the quality information;

transmitting the wireless connection quality information from the wireless access device to at least a gateway router communicating indirectly using a network extender device to establish the communication path with the wireless access device and communicating with a network external to the extended network.

17. (Original) The method of claim 16, further including transmitting or exchanging the wireless connection quality information from a wireless access device to/with other wireless access devices in the extended network.

18. (Original) The method of claim 17, wherein at least one wireless access device is configured to initiate a wireless connection between the wireless access device having the highest quality wireless connection for the wireless device and the wireless device.

19. (Original) The method of claim 18, wherein at least one wireless access device is further configured to initiate the wireless connection with the wireless device having the highest wireless connection quality based on a connection check between at least one wireless access device and the wireless device.

20. (Original) The method of claim 16, wherein the wireless connection quality includes at least one of a wireless signal strength, a noise level, a connection capability for a wireless device, a connection capability for a wireless access device, an extended network topology, a utilization status and a connection patch quality.

21. (Original) The method of claim 17, wherein a first wireless access device is further configured to initiate the wireless connection between the wireless access device having the highest wireless connection quality and the wireless device based on a connection check between at least one wireless access device and the wireless device., wherein the wireless access device having the highest wireless connection quality may be the first wireless access device.

REMARKS

This response is in response to the Final Office Action mailed on February 19, 2016. Claims 1 and 16 are currently being amended. No claims have been added or deleted. Accordingly, claims 1-21 are currently pending and are presented for review. Favorable reconsideration and allowance are requested in light of the foregoing amendments and the remarks which follow.

I. Interview Summary

Applicants conducted an interview with the Examiner on April 11, 2016, summarized by the Examiner in a summary mailed April 15, 2016. In that interview, Applicants discussed the differences between the present application and the cited prior art focusing on the “indirect communication path” limitation. The Examiner indicated that the limitation as intended would differentiate the present invention from the cited art. The Examiner recognized the differences but felt that the claims did not adequately capture the intended limitation. Potential amendments were discussed, but no consensus was reached.

II. Response

In the Office Action, the Examiner rejected claims 1-21 as being unpatentable over U.S. Patent Publication No. 2015/0043530, hereinafter “Bharghavan,” in view of U.S. Patent Publication No. 2008/0205317, hereinafter “Piipponen.” Applicants have

amended claims 1 and 16 to clarify the differences between the present application and the cited art to expedite prosecution as also described in detail below.

Briefly described, the invention relates to providing a network connection between a network device and one of a plurality of wireless access devices in an extended network based on the detection of an alternative access point providing one or more advantages over a current access point. Extended networks have indirect communication paths that require communication between a plurality of wireless access devices. For example, in an extended network, to implement a communication path from a wireless access device connected to a wireless device and a network gateway, the extended network may utilize a network extender such that there is an indirect path from the wireless access device, through the network extender, to the gateway router. In order to identify desirable wireless access devices in an extended network, sharing of connection quality information becomes desirable. Implementation of the invention uses sharing of wireless connection quality information between multiple devices, each of which may provide a wireless connection to a wireless device and/or wireless access devices.

In rejecting the claims, the Examiner asserted that Bharghavan teaches “generating wireless connection quality information for the wireless device specific to the wireless access device, the wireless connection quality information including wireless connection quality information for at least one indirect communication path.” Applicants

respectfully disagree with the Examiner's assertions, but have also amended claims 1 and 16 to clarify the differences as described in detail below.

Claim 1 was previously amended to recite "the wireless connection quality information including wireless connection quality information for at least one indirect communication path" to emphasize that the present application is implemented in an extended network. Since the Examiner indicated in the interview that the indirect communication path would be read broadly, claim 1 has been further amended to recite that the indirect communication path is "having at least one network extender device to establish the communication path between the gateway router and the wireless access device." A "network extender" within the meaning of the present application broader covers a wireless access device via which wireless devices can connect to a network. See present application, para. [0007]. In one nonlimiting example, a WiFi extender may use a single radio frequency device component to connect to both the wireless devices and the upstream wireless access device. Accordingly, Bharghavan does not describe an implementation in an extended network. Nothing in Bharghavan teaches or suggests wireless connection quality information include information for indirect communication paths using network extenders between the gateway router and the wireless access device. Using the system of Bharghavan, the system coordinator would not need to determine whether it is the best wireless access device based on either of a direct connection or an indirect connection through a wireless access device.

Further, although previously referenced by Applicants, the Examiner has not properly addressed additional deficiencies of the Bharghavan reference. Bharghavan does not teach or suggest a gateway router “receiving packets from a wireless device.” The system coordinator Bharghavan is NOT a gateway device that can itself provide a wireless connection and does not connect to an external network. The Examiner asserted that this deficiency is cured by combining Bharghavan with Piipponen. Applicants respectfully assert that this combination is improper since there would be no reason to combine these references.

Although Piipponen teaches a gateway router, there is no teaching or suggestion that the gateway router performs any of the other functionality recited in the claim nor would there be any reason to perform this functionality since Piipponen does not reference an extended network or indirect communication paths. Bharghavan also does not provide any motivation for moving the functionality described therein from the system coordinator to a gateway router.

Accordingly, Bharghavan, even in combination with Piipponen, does not teach or suggest all of the limitations of claim 1. Claim 16 has been amended to recite “a gateway router communicating indirectly using a network extender device to establish the communication path with the wireless access device” and, as such, also recites use of the described extended network functionality for an indirect communication path between a gateway router and a wireless access device (which would in turn communicate with a

wireless device). Claims 2-6 depend from claim 1 and include all of the limitations thereof and are believed to be allowable for at least the same reasons as claim 1. Claims 17-21 depend from claim 16 and include all of the limitations thereof and are believed to be allowable for at least the same reasons as claim 16.

It does not appear that the Examiner has addressed our previous arguments regarding claim 7. Claim 7 recites that the wireless connection quality information be exchanged **among** the wireless access devices and the gateway device. In order to determine desirable communication paths to a wireless device, wireless connection quality information must be exchanged between devices that can provide direct or indirect communication paths. For a wireless device, the connection quality provided by each node in the tree, including the root if it is a gateway wireless access device, is determined by not only the node's signal strength to the device, the wireless capability of the node ... but also the connection quality between the node and the root. (Application, [00011], see FIGS. 3A and 3B)

In contrast, nothing in Bharghavan teaches or suggests the wireless connection quality information is exchanged **among** the wireless access devices and the gateway device. Applicants assert that the one way transmission of information from the system coordinator is not an exchange as recited in claim 7. This deficiency is not cured by Piipponen. Accordingly, Bharghavan, even in combination with Piipponen, does not teach or suggest all of the limitations of claim 7. Claims 8-15 depend from claim 7 and

include all of the limitations thereof and are believed to be allowable for at least the same reasons as claim 7.

CONCLUSION

For the foregoing reasons, withdrawal of all rejections and issuance of a Notice of Allowance are respectfully requested.

A fee in the amount of \$1,200 is believed due with this communication for a Request for Continued Examination (RCE) – 1st Request for a large entity. The Director is authorized to direct payment of the \$1,200 fee to Deposit Account No. 50-1170. No other fee is believed due with this communication. Nevertheless, should the Examiner consider any fees to be payable in conjunction with this or any future communication, the Director is authorized to direct payment of such fees, or credit any overpayment, to Deposit Account No. 50-1170.

Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned and practitioners in accordance with 37 CFR 1.33 and 37 CFR 1.34 concerning any subject matter of this application by video conferencing, instant messaging, or electronic mail. I understand that a copy of these communications will be made of record in the application file.”

The Examiner is invited to contact the undersigned by telephone if it would help expedite matters.

Respectfully submitted,



Timothy E. Newholm
Registration No. 34,400

Date: May 19, 2016

Customer No.: 23598

BOYLE FREDRICKSON, S.C.
840 North Plankinton Avenue
Milwaukee, Wisconsin 53203
Telephone: (414) 225-9755
Facsimile: (414) 225-9753
Email: *docketing@boylefred.com*

Electronic Patent Application Fee Transmittal

Application Number:	13974090			
Filing Date:	23-Aug-2013			
Title of Invention:	SYSTEM AND METHOD FOR CONFIGURING DEVICE CONNECTIONS IN AN EXTENDED NETWORK ENVIRONMENT			
First Named Inventor/Applicant Name:	Yu-Te Lin			
Filer:	Timothy E Newholm/Nicole Bey			
Attorney Docket Number:	2188.047			
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Request for Continued Examination	1801	1	1200	1200
Total in USD (\$)				1200

Electronic Acknowledgement Receipt

EFS ID:	25823599
Application Number:	13974090
International Application Number:	
Confirmation Number:	4517
Title of Invention:	SYSTEM AND METHOD FOR CONFIGURING DEVICE CONNECTIONS IN AN EXTENDED NETWORK ENVIRONMENT
First Named Inventor/Applicant Name:	Yu-Te Lin
Customer Number:	23598
Filer:	Timothy E Newholm/Nicole Bey
Filer Authorized By:	Timothy E Newholm
Attorney Docket Number:	2188.047
Receipt Date:	19-MAY-2016
Filing Date:	23-AUG-2013
Time Stamp:	11:35:59
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1200
RAM confirmation Number	11617
Deposit Account	501170
Authorized User	NEWHOLM, TIMOTHY E

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

Charge any Additional Fees required under 37 CFR 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 CFR 1.17 (Patent application and reexamination processing fees)

TP Link Ex. 1004

Charge any Additional Fees required under 37 CFR 1.19 (Document supply fees)
 Charge any Additional Fees required under 37 CFR 1.20 (Post Issuance fees)
 Charge any Additional Fees required under 37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		00967386.PDF	4686828 e76ad9f98dbfcd38af7e8e0463d5cfd1f66b9e9	yes	15
Multipart Description/PDF files in .zip description					
	Document Description		Start	End	
	Request for Continued Examination (RCE)		1	2	
	Response After Final Action		3	3	
	Claims		4	8	
	Applicant Arguments/Remarks Made in an Amendment		9	15	

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30839 8da0ac53ad4835514c937016ef95d82221e9c632	no	2
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Warnings:

Information:

Total Files Size (in bytes): 4717667

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 displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/974,090	Filing Date 08/23/2013	☐ To be Mailed
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ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO**APPLICATION AS FILED – PART I**

(Column 1)

(Column 2)

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =	
☐ 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	05/19/2016	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	= 21	Minus	** 21	= 0	X \$80 =	0
	Independent (37 CFR 1.16(h))	= 3	Minus	*** 3	= 0	X \$420 =	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	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	Minus	**	=	X \$ =	
	Independent (37 CFR 1.16(h))	Minus	***	=	X \$ =	
	☐ 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.

** 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 number found in the appropriate box in column 1.

LIE
/VIKKI GRAY/

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

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



UNITED STATES PATENT AND TRADEMARK OFFICE

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

23598 7590 06/17/2016
BOYLE FREDRICKSON S.C.
840 North Plankinton Avenue
MILWAUKEE, WI 53203

EXAMINER

HAILE, AWET A.

ART UNIT

PAPER NUMBER

2474

DATE MAILED: 06/17/2016

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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13/974,090

08/23/2013

Yu-Te Lin

2188.047

4517

TITLE OF INVENTION: SYSTEM AND METHOD FOR CONFIGURING DEVICE CONNECTIONS IN AN EXTENDED NETWORK ENVIRONMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	09/19/2016

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: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax **(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.

23598 7590 06/17/2016
BOYLE FREDRICKSON S.C.
840 North Plankinton Avenue
MILWAUKEE, WI 53203

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 facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/974,090	08/23/2013	Yu-Te Lin	2188,047	4517

TITLE OF INVENTION: SYSTEM AND METHOD FOR CONFIGURING DEVICE CONNECTIONS IN AN EXTENDED NETWORK ENVIRONMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	09/19/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
HAILE, AWET A	2474	370-329000

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 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 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 has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

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

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

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

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

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

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

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

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

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

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

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

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/974,090	08/23/2013	Yu-Te Lin	2188,047	4517

23598 7590 06/17/2016
BOYLE FREDRICKSON S.C.
840 North Plankinton Avenue
MILWAUKEE, WI 53203

EXAMINER

HAILE, AWET A.

ART UNIT	PAPER NUMBER
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2474

DATE MAILED: 06/17/2016

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 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, 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.
13/974,090

Applicant(s)
LIN ET AL.

Examiner
AWET HAILE

Art Unit
2474

AIA (First Inventor to
File) Status
Yes

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

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

1. ☒ This communication is responsive to RCE filed on May 19, 2016.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1-21. 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 _____

/AWET HAILE/
Primary Examiner, Art Unit 2474

DETAILED ACTION

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

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 19, 2016 has been entered.

Examiner's Amendment

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee. Authorization for this examiner's amendment was given in a telephone interview with applicant's representative Timothy E. Newholm.

The claims has been amended as follows:

2. (Currently Amended) The ~~network device~~ gateway router of claim 1, wherein the computer processor is further configured to transmit the wireless connection quality information to other wireless access devices in the extended network.

3. (Currently Amended) The ~~network device~~ gateway router of claim 1, wherein the computer processor is further configured to receive wireless connection quality information from

Art Unit: 2474

a plurality of other network devices and to identify network device in the extended network providing the highest quality wireless connection for the wireless device.

4. (Currently Amended) The ~~network device~~ gateway router of claim 3, wherein the processor is further configured to initiate a wireless connection between the network device having the highest wireless connection quality and the wireless device.

5. (Currently Amended) The ~~network device~~ gateway router of claim 4, wherein the processor is further configured to initiate the wireless connection with the network device having the highest wireless connection quality based on a connection check between the network device and the wireless device.

6. (Currently Amended) The ~~network device~~ gateway router of claim 1, wherein the wireless connection quality information includes at least one of a wireless signal strength, a connection capability, a utilization status, a network topology, and a connection patch quality.

7. (Currently Amended) An extended network configured to implement an extended management function to identify a wireless access device providing a highest quality wireless connection to a wireless device, comprising:

a gateway device configured to enable communication between the extended network and an external network;

at least two wireless access devices in the extended network; and

at least one wireless device having a wireless connection to ~~a~~ at least one of the wireless access devices,

wherein the gateway device and the wireless access devices include a processor executing the extended management function to identify the wireless access device providing the highest quality wireless connection based on wireless connection quality information, the wireless connection quality information including wireless connection quality information for at least one indirect communication path having at least one network extender device to establish the communication path between the gateway device and the wireless access device, exchanged among the wireless access devices and the gateway device.

8. (Currently Amended) The extended network of claim 7, wherein the extended network is configured in a tree topology including ~~a~~ the gateway device as a root, one or more wireless access devices as nodes in the tree, and a wireless device as a leaf.

11. (Currently Amended) The extended network of claim 10, wherein at least one wireless access device is further configured to initiate the connection to the wireless access device having the highest wireless connection quality based on a connection check between the at least one ~~the~~ wireless access device and the wireless device.

19. (Currently Amended) The extended network of claim 18, wherein at least one wireless access device is further configured to initiate the wireless connection with the wireless device having the highest wireless connection quality based on a connection check between the at least one wireless access device and the wireless device.

Allowable Subject Matter

4. **Claims 1-21** are allowed. The following is an examiner's statement of reasons for allowance:

An updated search has been performed and Applicants remarks filed on 03/04/2016 have been fully considered, and these remarks, in combination with the amendment filed herein have overcome the submitted prior art. The prior art of record, considered individually or in any reasonable combination fail to fairly show or suggest a claimed invention comprising, identifying the wireless device within a table of wireless devices connected to a wireless access device in an extended wireless network, generating wireless connection quality information for the wireless device specific to the wireless access device, the wireless connection quality information including wireless connection quality information for at least one indirect communication path having at least one network extender device to establish the communication path between the gateway router and the wireless access device , as substantially described in independent claim 1,

identify the wireless access device providing the highest quality wireless connection based on wireless connection quality information, the wireless connection quality information including wireless connection quality information for at least one indirect communication path having at least one network extender device to establish the communication path between the gateway router and the wireless access device, exchanged among the wireless access devices and the gateway device, as substantially described in independent claim 7,

generating wireless connection quality information at each wireless access device in the plurality of wireless access devices describing the quality of a wireless connection between the wireless device and the wireless access device generating the quality information; transmitting the wireless connection quality information from the wireless access device to at least a gateway router communicating indirectly using network extender device to establish the communication

Art Unit: 2474

path with the wireless access device and communicating with a network external to the extended network, as substantially described in independent claim 16.

These limitations, in combination with the remaining limitations of claims 1, 7 and 16 are not taught nor suggested by the prior art of record. The dependent claims depend from allowed claims and therefore allowed for the same reasons.

5. 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".

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Awet Haile whose telephone number is (571)270-3114. The examiner can normally be reached on Monday through Friday 8:30 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Thier can be reached on (571) 272-2832. 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.

/AWET HAILE/

Primary Examiner, Art Unit 2474

Search Notes 	Application/Control No. 13974090	Applicant(s)/Patent Under Reexamination LIN ET AL.
	Examiner AWET HAILE	Art Unit 2474

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
NPL search(Google and IP.com)	5/29/2015	A.H
East CPC text search(H04W24/10, H04W76/02)	5/29/2015	A.H
Inventor search(edan and east)	5/29/2015	A.H
East CPC text search(H04W24/10, H04W76/02) updated	2/11/2016	A.H
Inventor search(edan and east)	2/11/2016	A.H
East limited text search (H04W24/10, H04W76/02 H04W84/12 H04W36/18 H04W36/30 H04W24/02 H04W24/08 H04W36/04 H04W36/32 H04W48/10 H04L12/2602 H04L2001/0097 H04L43/0811 H04L45/00)	6/10/2016	A.H
NPL search(Google and IP.com)	6/10/2016	A.H

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	East interference limited text search (H04W24/10, H04W76/02 H04W84/12 H04W36/18 H04W36/30 H04W24/02 H04W24/08 H04W36/04 H04W36/32 H04W48/10 H04L12/2602 H04L2001/0097 H04L43/0811 H04L45/00)	6/10/2016	A.H

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L15	30	(extend\$4 same2 ((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff))	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/06/10 19:08
L14	11	(extend\$4 same ((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff))	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/06/10 19:07
L7	136	2 AND ((H04W84/12 OR H04W36/18 OR H04W36/30 OR H04W24/02 OR H04W24/08 OR H04W36/04 OR H04W36/32 OR H04W48/10 OR H04L12/2602 OR H04L2001/0097 OR H04L43/0811 OR H04L45/00).CPC.)	US-PGPUB	OR	OFF	2016/06/10 17:57
L6	16	(US-20100128694-\$ or US-20150043530-\$ or US-20140241182-\$ or US-20080014934-\$ or US-20050036459-\$ or US-20120281585-\$ or US-20120021788-\$ or US-20130174186-\$ or US-20130272269-\$ or US-20140185567-\$ or US-20080205317-\$ or US-20070008889-\$ or US-20030133422-\$ or US-20110158127-\$ or US-20140016612-\$ or US-20070183370-\$).did.	US-PGPUB	OR	OFF	2016/06/10 17:55
L4	11	((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff) same extend\$4	US-PGPUB; USPAT	OR	ON	2016/06/10 17:50
L3	476	L2 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/06/10 17:37
L2	496	((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff)	US-PGPUB; USPAT	OR	ON	2016/06/10 17:37

L1	5	((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff) with extend\$4	US-PGPUB; USPAT	OR	ON	2016/06/10 17:11
S84	471	S83 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/05/25 18:09
S83	490	((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff)	US-PGPUB; USPAT	OR	ON	2016/05/25 18:09
S82	6	(S79 S80 S81) and (((Access near point) or AP or (Access near2 device) or BS or BSS or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service))).clm.	US-PGPUB; USPAT	OR	ON	2016/05/25 18:08
S81	36	((Pramod) near2 (Viswanath)).INV.	US-PGPUB; USPAT	OR	OFF	2016/05/25 18:08
S80	1010	((Junyi) near2 (Li)).INV.	US-PGPUB; USPAT	OR	OFF	2016/05/25 18:08
S79	162	((Xinzhou) near2 (Wu)).INV.	USPAT; USOCR	OR	OFF	2016/05/25 18:08
S78	1693	S77 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/05/25 10:19
S77	1837	(wifi or WLAN) near5 (extend\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/05/25 10:19
S76	2341	S75 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/05/25 10:18
S75	2541	(wifi or WLAN) near5 (repeater or extend\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO;	OR	ON	2016/05/25 10:18

			DERWENT			
S74	6056	(wifi or WLAN) with (repeater or extend\$4)	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/05/25 10:18
S73	170	S72 and (@ad<="20130823" @pd<="20130823" @riad<="20130823" @prad<="20130823")	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/05/25 09:43
S72	184	(QAS or strength or quality or noise) with (wifi or WLAN) with (repeater or extend\$4)	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/05/25 09:43
S71	476	((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with ((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff)	US- PGPUB; USPAT	OR	ON	2016/02/11 21:14
S70	1	"13974090"	US- PGPUB; USPAT	OR	ON	2016/02/11 21:07
S69	145	S68 and (@ad<="20130823" @pd<="20130823" @riad<="20130823" @prad<="20130823")	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:41
S68	148	(gateway near2 router) with (external or internet) with (wifi or WLAN)	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:41
S67	258	(gateway near2 router) with (external or internet) same (wifi or WLAN)	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:41
S66	330	S64 and (repeater or extende\$4)	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:18
S65	330	S64 and(repeater or extende\$4)	US-	OR	ON	2016/02/10

			PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT			08:18
S64	883	S63 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:18
S63	905	(router or gateway) same (wifi or WLAN) same (handoff or handover)	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:18
S62	0	(router or gateway) same (wifi or WLAN) same(repeater) same (handoff or handover)	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:17
S61	0	(router or gateway) same (wifi or WLAN) with (repeater) same (handoff or handover)	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:17
S60	536	S59 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:10
S59	571	(router or gateway) same (wifi or WLAN) with (repeater)	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:10
S58	731	S57 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:09
S57	778	(router or gateway) same (wifi or WLAN) with (repeater or extende\$4)	US- PGPUB; USPAT; USOCR; FPRS; EPO;	OR	ON	2016/02/10 08:09

			DERWENT			
S56	4171	(wifi or WLAN) with (repeater or extende\$4)	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:09
S55	3390727	(wifi or WLAN) with repeater or extende\$4	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 08:08
S54	252	S53 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 07:58
S53	268	S50 and S52	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 07:58
S52	4431	extend\$4 with (wifi or WLAN)	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 07:57
S51	148372	extend\$4 with wifi or WLAN	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 07:57
S50	38835	gateway near2 router	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/10 07:57
S49	463	S39 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/09 14:12
S48	5	S44 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US- PGPUB; USPAT; USOCR;	OR	ON	2016/02/09 14:11

			FPRS; EPO; DERWENT			
S47	81	S46 and (@ad<="20011010" @pd<="20011010" @rlad<="20011010" @prad<="20011010")	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/09 13:34
S46	229	(amount or quant\$4) with ((dummy or pad\$3) near2 (data or bit)) with process\$4	US- PGPUB; USPAT	OR	ON	2016/02/09 13:34
S45	5	S44 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/09 12:20
S44	5	((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff) with extend\$4	US- PGPUB; USPAT	OR	ON	2016/02/09 12:20
S43	81	S42 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/09 12:19
S42	88	extended adj wireless adj network	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	OFF	2016/02/09 12:19
S41	6	((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff) and extend\$4 with wifi	US- PGPUB; USPAT	OR	ON	2016/02/09 12:19
S40	463	S39 and (@ad<="20130823" @pd<="20130823" @rlad<="20130823" @prad<="20130823")	US- PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT	OR	ON	2016/02/09 09:21
S39	476	((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff)	US- PGPUB; USPAT	OR	ON	2016/02/09 09:21
S38	1	"13974090"	US-	OR	ON	2016/02/09

			PGPUB; USPAT			07:55
S37	6	((S34 S35 S36) and (((Access near point) or AP or (Access near2 device) or BS or BSS or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service))) .clm.	US- PGPUB; USPAT	OR	ON	2016/02/09 07:26
S36	36	((Pramod) near2 (Viswanath)).INV.	US- PGPUB; USPAT	OR	OFF	2016/02/09 07:26
S35	973	((Junyi) near2 (Li)).INV.	US- PGPUB; USPAT	OR	OFF	2016/02/09 07:26
S34	159	((Xinzhou) near2 (Wu)).INV.	USPAT; USOCR	OR	OFF	2016/02/09 07:26

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L13	2	(extend\$4 same ((Access near point) or AP or (Access near2 device) or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service)) with (Handover or handoff)).clm.	US- PGPUB; USPAT	OR	ON	2016/06/10 19:05
L12	22	("20050047371" "20050053043" "20050255847" "20060056367" "20060072507" "20060092883" "20060171357" "20070014267" "20070047492" "20070223432" "20080049702" "6393261" "7302256" "7340247" "7457620").PN. OR ("8023468").URPN.	US- PGPUB; USPAT	OR	OFF	2016/06/10 18:21
L11	6	8 same (extend\$4)	USPAT	OR	ON	2016/06/10 18:19
L9	348	8 AND (H04W24/10 OR H04W76/02 or H04W84/12 OR H04W36/18 OR H04W36/30 OR H04W24/02 OR H04W24/08 OR H04W36/04 OR H04W36/32 OR H04W48/10 OR H04L12/2602 OR H04L2001/0097 OR H04L43/0811 OR H04L45/00).CPC.	USPAT	OR	OFF	2016/06/10 18:18
L8	3488	((Access near point) or AP or (Access near2 device) or BS or BSS or (access near2 gateway)) with (((channel or signal or connection) near2 quality) or QOS or (quality near2 service))) .clm.	US- PGPUB; USPAT	OR	ON	2016/06/10 18:17

6/10/2016 7:14:36 PM

C:\Users\ahaile1\Documents\EAST\Workspaces\13974090.wsp

<i>Index of Claims</i> 	Application/Control No. 13974090	Applicant(s)/Patent Under Reexamination LIN ET AL.
	Examiner AWET HAILE	Art Unit 2474

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

☒ Claims renumbered in the same order as presented by applicant					☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE								
Final	Original	05/29/2015	02/11/2016	06/10/2016						
	1	✓	✓	=						
	2	✓	✓	=						
	3	✓	✓	=						
	4	✓	✓	=						
	5	✓	✓	=						
	6	✓	✓	=						
	7	✓	✓	=						
	8	✓	✓	=						
	9	✓	✓	=						
	10	✓	✓	=						
	11	✓	✓	=						
	12	✓	✓	=						
	13	✓	✓	=						
	14	✓	✓	=						
	15	✓	✓	=						
	16	✓	✓	=						
	17	✓	✓	=						
	18	✓	✓	=						
	19	✓	✓	=						
	20	✓	✓	=						
	21	✓	✓	=						

To: docketing@boylefred.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 23598

Jun 17, 2016 06:35:20 AM

Dear PAIR Customer:

BOYLE FREDRICKSON S.C.
840 North Plankinton Avenue
MILWAUKEE, WI 53203
UNITED STATES

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Application	Document	Mailroom Date	Attorney Docket No.
13974090	NOA	06/17/2016	2188.047
	INTV.SUM.EX	06/17/2016	2188.047

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/974,090	08/23/2013	Yu-Te Lin	2188.047	4517

23598 7590 06/30/2016
BOYLE FREDRICKSON S.C.
840 North Plankinton Avenue
MILWAUKEE, WI 53203

EXAMINER

HAILE, AWET A.

ART UNIT	PAPER NUMBER
----------	--------------

2474

NOTIFICATION DATE	DELIVERY MODE
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06/30/2016

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):

docketing@boylefred.com



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Application No. : 13974090
Applicant : Lin
Filing Date : 08/23/2013
Date Mailed : 06/30/2016

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Notice of Allowance Mailed

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given two (2) months from the mail date of this Notice within which to respond. This time period for reply is extendable under 37 CFR 1.136(a) for only TWO additional MONTHS.

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED.

See attachment(s).

*A copy of this notice **MUST** be returned with the reply. Please address response to
"Mail Stop Issue Fee, Commissioner for Patents,
P.O. Box 1450, Alexandria, VA 22313-1450".*

/Anita Grimmage/
Publication Branch
Office of Data Management
(571) 272-4200

Application No. 13974090

**SPECIFICATION REFERS TO ITS OWN PAGE/PARAGRAPH NUMBER(S) AND/OR
SPECIFICATION REFERS TO NONEXISTENT CLAIM(S)**

- ☒ The patent will be printed in numbered columns with intercolumnar line numbers and without paragraph numbers. Any reference(s) within the applicant-filed specification to its own page number(s) or paragraph number(s) will have no meaning in the printed patent.

In response to this notice, the applicant either should file an amendment to the specification that removes the reference(s) to the page number(s) or paragraph number(s) or should submit a letter stating that the patent specification should be printed with the reference(s) to the page number(s) or paragraph number(s).

See Page(s)/Paragraph(s) Page 4, paragraph [00010].

- ☐ The specification refers by number to one or more claims that are not present in the allowed application – that is, the claim number(s) mentioned in the specification are higher than the total number of allowed claims.

In response to this notice, the applicant either should file an amendment to the specification that removes the reference(s) to the nonexistent claim(s) or should submit a letter stating that the patent specification should be printed with the reference(s) to the nonexistent claim(s).

See Page(s)/Paragraph(s) .

To: docketing@boylefred.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
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Jun 30, 2016 06:08:56 AM

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UNITED STATES

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Application	Document	Mailroom Date	Attorney Docket No.
13974090	M327	06/30/2016	2188.047

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 13/974,090

Examiner: Haile, Awet

Filing Date: Aug. 23, 2013

Group Art Unit: 2474

Inventor: Lin, et al.

Attorney Docket No.: 2188.047

Confirmation No.: 4517

Customer Account No.: 23598

Title: *System and Method for Configuring Device Connections in an
Extended Network Environment*

AMENDMENT UNDER 37 CFR § 1.312

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

Sir:

This amendment is being submitted in response to the Notice to File Corrected Application Papers mailed June 30, 2016. Please amend the above-identified application as follows:

Amendments to the Specification begin on page 2.

Arguments/Remarks begin on page 3.

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0010] on page 4 of the application with the following replacement paragraph with markings to show all the changes relative to the previous version of the paragraph:

[00010] In a home network, there is a router or gateway that connects the internal network, the home network, and the external network, the Internet. For a home network where there is more than one wireless access device for a wireless device to reach the gateway or the external network, almost no wireless device knows which wireless access device can give it better connection to the network. This is because a wireless device does not know which access device has a better connection to the router/gateway and the interpretation of speed for different access devices could be different. For example, when a client sees one connection of 10mbps from one access device and one connection of 7mbps from another access device. If the 10mbps connection is from a gateway, then it is a better connection than the other. If the 10mbps connection is from an extender, as elaborated in ~~{0007}~~ previously, the connection speed from the wireless device to the gateway (the upstream access device) could be just 5mbps, and so the 7mbps direct connection to the gateway is actually the better connection. In a general way, a home network has a tree topology. The root is the router/gateway, the nodes are extenders, and the leaves are wireless devices or wired devices. The whole tree is connected to the Internet through the router/gateway at the root. There could be multiple extenders connecting to the router/gateway directly and there could be extenders connecting to an upstream extender and then connecting to the router/gateway indirectly. For a wireless device, the connection quality provided by each node in the tree, including the root if it is a gateway wireless access device, is determined by not only the node's signal strength to the device, the wireless capability of the node ... but also the connection quality between the node and the root.

REMARKS

This Amendment is filed in response to the Notice to File Corrected Application Paper dated June 30, 2016, and removes the reference within the applicant-filed specification to its own paragraph number. No new matter is being added to the application.

No fees are believed payable with this submission. However, the Commissioner is hereby authorized to charge any fees in connection herewith to Deposit Account No. 50-1170.

Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned and practitioners in accordance with 37 C.F.R. § 1.33 and 37 C.F.R. § 1.34 concerning any subject matter of this application by video conferencing, instant messaging, or electronic mail. I understand that a copy of these communications will be made of record in the application file.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,


Timothy E. Newholm
Registration No. 34,400

Dated: July 6, 2016

Customer No.: 23598

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Facsimile: (414) 225-9753
Email: docketing@boylefred.com

Electronic Acknowledgement Receipt

EFS ID:	26270044
Application Number:	13974090
International Application Number:	
Confirmation Number:	4517
Title of Invention:	SYSTEM AND METHOD FOR CONFIGURING DEVICE CONNECTIONS IN AN EXTENDED NETWORK ENVIRONMENT
First Named Inventor/Applicant Name:	Yu-Te Lin
Customer Number:	23598
Filer:	Timothy E Newholm/Nicole Bey
Filer Authorized By:	Timothy E Newholm
Attorney Docket Number:	2188.047
Receipt Date:	06-JUL-2016
Filing Date:	23-AUG-2013
Time Stamp:	15:32:46
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		00982228.PDF	855720	yes	3
			95c4d58e20de560e00ac21e5b0a92a9d6ae5 a8161		

Multipart Description/PDF files in .zip description			
Document Description	Start	End	
Post Allowance Communication - Incoming	1	1	
Specification	2	2	
Applicant Arguments/Remarks Made in an Amendment	3	3	

Warnings:

Information:

Total Files Size (in bytes):	855720
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National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/974,090	08/23/2013	Yu-Te Lin	2188.047	4517
23598	7590	07/13/2016		
BOYLE FREDRICKSON S.C. 840 North Plankinton Avenue MILWAUKEE, WI 53203			EXAMINER HAILE, AWET A.	
			ART UNIT 2474	PAPER NUMBER
			NOTIFICATION DATE 07/13/2016	DELIVERY MODE 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):

docketing@boylefred.com

Response to Rule 312 Communication	Application No. 13/974,090	Applicant(s)
	Examiner	Art Unit

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

1. ☒ The amendment filed on 06 July 2016 under 37 CFR 1.312 has been considered, and has been:

a) ☒ entered.

b) ☐ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.

Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

N.Y. Horne

PUBLISHING DIVISION

To: docketing@boylefred.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 23598

Jul 13, 2016 06:20:53 AM

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MILWAUKEE, WI 53203
UNITED STATES

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Application	Document	Mailroom Date	Attorney Docket No.
13974090	N271	07/13/2016	2188.047

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Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

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PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 or **Fax** (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)

23598 7592 06/17/2016
BOYLE FREDRICKSON S.C.
 840 North Plankinton Avenue
 MILWAUKEE, WI 53203

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

Certificate of Mailing or Transmission

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

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/974,090	08/23/2013	Yu-Te Lin	2188.047	4517

TITLE OF INVENTION: SYSTEM AND METHOD FOR CONFIGURING DEVICE CONNECTIONS IN AN EXTENDED NETWORK ENVIRONMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	09/19/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
HAILE, AWET A	2474	370-329000

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 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

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

1. Boyle Fredrickson, S.C.

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 has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Netgear, Inc.

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

San Jose, CA

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

4a. The following fee(s) are submitted:

- ☒ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

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

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 50-1170 (enclose an extra copy of this form).

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 undiscouted 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 /Timothy E. Newholm/

Date September 8, 2016

Typed or printed name Timothy E. Newholm

Registration No. 34,400

Electronic Patent Application Fee Transmittal

Application Number:	13974090			
Filing Date:	23-Aug-2013			
Title of Invention:	SYSTEM AND METHOD FOR CONFIGURING DEVICE CONNECTIONS IN AN EXTENDED NETWORK ENVIRONMENT			
First Named Inventor/Applicant Name:	Yu-Te Lin			
Filer:	Timothy E Newholm/Nicole Bey			
Attorney Docket Number:	2188.047			
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	960	960

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				960

Electronic Acknowledgement Receipt

EFS ID:	26864296
Application Number:	13974090
International Application Number:	
Confirmation Number:	4517
Title of Invention:	SYSTEM AND METHOD FOR CONFIGURING DEVICE CONNECTIONS IN AN EXTENDED NETWORK ENVIRONMENT
First Named Inventor/Applicant Name:	Yu-Te Lin
Customer Number:	23598
Filer:	Timothy E Newholm/Nicole Bey
Filer Authorized By:	Timothy E Newholm
Attorney Docket Number:	2188.047
Receipt Date:	08-SEP-2016
Filing Date:	23-AUG-2013
Time Stamp:	11:37:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$960
RAM confirmation Number	090816INTEFSW00011754501170
Deposit Account	501170
Authorized User	Nicole Bey

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

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)
37 CFR 1.20 (Post Issuance fees)
37 CFR 1.21 (Miscellaneous fees and charges)

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)	01003593.PDF	597587	no	1
			5b1b7827936e4a68ac3f0cnc31351afd254 (45e		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	31063	no	2
			46107cfc981a1b28f401b996f35d5580b222 5e31		

Warnings:

Information:

Total Files Size (in bytes):			628650
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New Applications Under 35 U.S.C. 111

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New International Application Filed with the USPTO as a Receiving Office

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



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/974,090	10/11/2016	9468025	2188.047	4517

23598 7590 09/21/2016
BOYLE FREDRICKSON S.C.
840 North Plankinton Avenue
MILWAUKEE, WI 53203

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 220 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.

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

NETGEAR, Inc., San Jose, CA;
Yu-Fe Lin, Taipei City, TAIWAN;
Bing-Huang Cheng, Taichung, TAIWAN;

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Sep 22, 2016 06:04:17 AM

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Application	Document	Mailroom Date	Attorney Docket No.
13974090	ISSUE.NTF	09/21/2016	2188.047

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