

Exhibit 1002

WHAT IS CLAIMED IS:

1. A method for transmitting data in a wireless communication system, the method comprising:

transmitting, by a first station, a plurality of request to send (RTS) frames to a second station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through a corresponding one of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth;

receiving, by the first station, at least one clear to send (CTS) frame in response to at least one of the plurality of RTS frames from the second station through at least one idle subchannel of the plurality of subchannels; and

transmitting, by the first station, a data frame to the second station after receiving the at least one CTS frame,

wherein, if the at least one CTS frame includes channel information related to the at least one idle subchannel through which the CTS frame is transmitted by the second station, the data frame is transmitted through the at least one idle subchannel indicated by the channel information, and

wherein a number of the at least one idle subchannel through which the CTS frame is transmitted is less than a number of the plurality of subchannels through which the plurality of RTS frames are transmitted.

2. The method of claim 1, wherein, if the at least one CTS frame does not include the channel information, the data frame is transmitted through at least one of the plurality of subchannels.

3. The method of claim 1, wherein the number of the plurality of subchannels is 2 or 4.

4. A device comprising:

a transceiver; and

a processor operatively connected to the transceiver and configured to:

instruct the transceiver to transmit a plurality of request to send (RTS) frames to a station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through a corresponding one of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth,

instruct the transceiver to receive at least one clear to send (CTS) frame in

response to at least one of the plurality of RTS frames from the station through at least one idle subchannel of the plurality of subchannels, and

instruct the transceiver to transmit a data frame to the station after receiving the at least one CTS frame,

wherein, if the at least one CTS frame includes channel information related to the at least one idle subchannel through which the CTS frame is transmitted by the station, the data frame is transmitted through the at least one idle subchannel indicated by the channel information, and

wherein a number of the at least one idle subchannel through which the CTS frame is transmitted is less than a number of the plurality of subchannels through which the plurality of RTS frames are transmitted.

5. The device of claim 4, wherein, if the at least one CTS frame does not include the channel information, the data frame is transmitted through at least one of the plurality of subchannels.

6. The device of claim 4, wherein the number of the plurality of subchannels is 2 or 4.



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15/357,438	11/21/2016	Yong Ho SEOK	5438-0208PUS4	8121
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BIRCH STEWART KOLASCH & BIRCH, LLP			ULYSSE, JAE L M	
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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):

mailroom@bskb.com

Office Action Summary	Application No. 15/357,438	Applicant(s) SEOK, YONG HO	
	Examiner JAE L ULYSSE	Art Unit 2477	AIA (First Inventor to File) Status No

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

Period for Reply

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

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

Status

1) ☒ Responsive to communication(s) filed on 11/21/2016.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

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

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

Disposition of Claims*

5) ☒ Claim(s) 1-6 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) 1-6 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 11/21/2016 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

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

Certified copies:

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

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

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

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

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

Attachment(s)

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

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date 11/21/2016.

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

4) ☐ Other: _____.

DETAILED ACTION

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

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 11/21/2016 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the

scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

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

2. Claims 1-6 are rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1, 4, 6, 8 of U.S. Patent No. 8,989,158; and over claims 1, 2, 5, 6, of U.S. Patent No. 9,107,222; and over claims 1-4 of U.S. Patent No. 9,526,114. Although the claims at issue are not identical, they are not patentably distinct from each other because the method and device claims two stations communicating though at least one idle subchannel by sending frames such as CTS (clear to send) and RTS (request to send) and each of the plurality of sub-channels having 20 MHz.

Note the table below that identifies all the claims along with analysis depicting their similarities.

CON AP# 15357438	Patent#9526114, AP# 14800425	Patent# 9107222, AP# 14579286	Patent#8989158, AP# 12999836
As to Claim 1. A method for transmitting data in a wireless communication system, the method comprising: transmitting, by a first station, a plurality of request to send (RTS) frames to a second station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through a corresponding one of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth; receiving, by the first station, at least one clear to send (CTS) frame in response to at least one of the plurality of RTS frames from the second station through at least one idle subchannel of the plurality of subchannels; and transmitting, by the first station, a data frame to the second station after receiving the at least one CTS frame,	1. A method for transmitting data in a wireless communication system, the method comprising: transmitting, by a first station, a plurality of request to send (RTS) frames to a second station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through a corresponding one of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth; receiving, by the first station, in response to at least one of the plurality of RTS frames, a clear to send (CTS) frame from the second station through at least one idle subchannel of the plurality of subchannels; and	1. A method for communicating in a wireless local area network, the method comprising: transmitting, by a first station, a plurality of a request to send (RTS) frames to a second station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through each of the plurality of subchannels; receiving, by the first station, at least one clear to send (CTS) frame as a response to the plurality of RTS frames from the second station through at least one idle subchannel among the plurality of subchannels, the at least one CTS frame being received through the at least one idle subchannel; and transmitting, by the first station, a	1. A method of communicating in a wireless local area network, the method comprising: receiving, by a first station, a plurality of a request to send (RTS) frames from a second station through a plurality of subchannels, each of the plurality of RTS frames being received through each of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth; determining, by the first station, at least one idle subchannel among the plurality of subchannels if a network allocation vector of the first station indicates idle; transmitting, to the second station by the first station, at least one clear to send (CTS) frame as a response to the plurality

wherein, if the at least one CTS frame includes channel information related to the at least one idle subchannel through which the CTS frame is transmitted by the second station, the data frame is transmitted through the at least one idle subchannel indicated by the channel information, and wherein a number of the at least one idle subchannel through which the CTS frame is transmitted is less than a number of the plurality of subchannels through which the plurality of RTS frames are transmitted. 2. The method of claim 1, wherein, if the at least one CTS frame does not include the channel information, the data frame is transmitted through at least one of the plurality of subchannels.	transmitting, by the first station, a data frame to the second station after receiving the CTS frame, wherein: if the CTS frame includes channel information related to all of the at least one idle subchannel through which the CTS frame is actually transmitted by the second station, the data frame is transmitted via the at least one idle subchannel indicated by the channel information, and if the CTS frame does not include the channel information, the data frame is transmitted via at least one of the plurality of subchannels.	data frame to the second station, wherein a number of the at least one idle subchannel is equal to or less than a number of the plurality of subchannels, wherein: if the at least one CTS frame includes channel information indicating all of the at least one idle subchannel through which the at least one CTS frame is transmitted, the data frame is transmitted via the at least one idle subchannel indicated by the channel information, and if the at least one CTS frame does not include the channel information, the data frame is transmitted via at least one of the plurality of subchannels indicated by the plurality of RTS frames, and wherein each of the plurality of subchannels has a bandwidth of 20 MHz.	of RTS frames through the at least one idle subchannel, the at least one CTS frame being transmitted through the at least one idle subchannel; and receiving, by the first station, a data frame from the second station, wherein, if the at least one CTS frame includes channel information indicating all of the at least one idle subchannel through which the at least one CTS frame is transmitted, the data frame is transmitted via the at least one idle subchannel indicated by the channel information, and wherein, if the at least one CTS frame does not include the channel information, the data frame is transmitted via the plurality of subchannels indicated by the plurality of RTS frames. 4. A method of communicating in a wireless local area network, the method comprising:
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			transmitting, by a second station, a plurality of request to send (RTS) frames to a first station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through each of the plurality of subchannel, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth; receiving, by the second station from first station, at least one clear to send (CTS) frame as a response to the plurality of RTS frames through at least one idle subchannel, the at least one CTS frame being received through the at least one idle subchannel; and transmitting a data frame, wherein a number of the at least one CTS frame is equal to or less than a number of the plurality of subchannels, and wherein, if the at
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			least one CTS frame includes channel information indicating all of the at least one idle subchannel through which the at least one CTS frame is transmittal, the data frame is transmitted via the at least one idle subchannel indicated by the channel information, and wherein if the at least one CTS frame does not include the channel information, the data flume is transmitted via the plurality of subchannels indicated by the plurality of RTS frames.
Analysis: Current CON 15357438 is similar to Patent 8989158 because the claims recites are similar in particular claim 6 and 8 of said patent recites “wherein a number of the at least one idle channel is equal or less than a number of plurality of subchannels” which is similar to the CON application. Further, the CON is similar to patent 9107222 and 9526114 for they are claiming a method relating to sending RTS/CTS frames in idle subchannels having a bandwidth of 20 MHz.			
3. The method of claim 1, wherein the number of the plurality of subchannels is 2 or 4.	2. The method of claim 1, wherein the number of the plurality of subchannels is 2 or 4.	2. A method of claim 1, wherein the number of the plurality of subchannels is 2 or 4.	
Analysis All the claims in each application are similar because they claim the number of the subchannels to be 2 or 4.			

4. A device comprising: a transceiver; and a processor operatively connected to the transceiver and configured to: instruct the transceiver to transmit a plurality of request to send (RTS) frames to a station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through a corresponding one of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth, instruct the transceiver to receive at least one clear to send (CTS) frame in response to at least one of the plurality of RTS frames from the station through at least one idle subchannel of the plurality of subchannels, and instruct the transceiver to transmit a data frame to the station after receiving the at least one CTS frame,	3. A device comprising: a transceiver; and a processor operatively connected to the transceiver and configured to: instruct the transceiver to transmit a plurality of request to send (RTS) frames to a station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through a corresponding one of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth, instruct the transceiver to receive, in response to at least one of the plurality of RTS frames, a clear to send (CTS) frame from the station through at least one idle subchannel of the plurality of subchannels, and	5. A device configured to communicate in a wireless local area network, the device comprising: a transceiver; and a processor configured to: instruct the transceiver to transmit a plurality of a request to send (RTS) frames to a station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through each of the plurality of subchannels, instruct the transceiver to receive at least one clear to send (CTS) frame as a response to the plurality of RTS frames from the station through at least one idle subchannel among the plurality of subchannels, the at least one CTS frame being received through the at least one idle	6. A station configured to communicate in a wireless local area network, comprising: a transceiver; and a processor operatively connected to the transceiver, and configured to: receive a plurality of request to send (RTS) frames from another station through a plurality of subchannels, each of the plurality of RTS frames being received through each of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth; determine at least one idle subchannel among the plurality of subchannels if a network allocation vector of the station indicates idle; transmit, to the another station, at

wherein, if the at least one CTS frame includes channel information related to the at least one idle subchannel through which the CTS frame is transmitted by the station, the data frame is transmitted through the at least one idle subchannel indicated by the channel information, and wherein a number of the at least one idle subchannel through which the CTS frame is transmitted is less than a number of the plurality of subchannels through which the plurality of RTS frames are transmitted. 5. The device of claim 4, wherein, if the at least one CTS frame does not include the channel information, the data frame is transmitted through at least one of the plurality of subchannels.	instruct the transceiver to transmit a data frame to the station after receiving the CTS frame, wherein: if the CTS frame includes channel information related to all of the at least one idle subchannel through which the CTS frame is actually transmitted by the station, the data frame is transmitted via the at least one idle subchannel indicated by the channel information, and if the CTS frame does not include the channel information, the data frame is transmitted via at least one of the plurality of subchannels.	subchannel, and instruct the transceiver to transmit a data frame to the station, wherein a number of the at least one idle subchannel is equal to or less than a number of the plurality of subchannels, wherein: if the at least one CTS frame includes channel information indicating all of the at least one idle subchannel through which the at least one CTS frame is transmitted, the data frame is transmitted via the at least one idle subchannel indicated by the channel information, and if the at least one CTS frame does not include the channel information, the data frame is transmitted via at least one of the plurality of subchannels indicated by the plurality of RTS frames, and wherein each of the plurality of subchannels has a bandwidth of 20	least one clear to send (CTS) frame as a response to the plurality of RTS frames through the at least one idle subchannel, the at least one CTS frame being transmitted through the at least one idle subchannel; and receive a data frame from the another station, wherein a number of the at least one idle subchannel is equal to or less than a number of the plurality of subchannels, wherein, if the at least one CTS frame includes channel information indicating all of the at least one idle subchannel through which the at least one CTS frame is transmitted, the data frame is transmitted via the at least one idle subchannel indicated by the channel information, and wherein if the at least one CTS frame does not include the channel information, the data frame is
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		MHz.	transmitted via the plurality of subchannels indicated by the plurality of RTS frames. 8. A station configured to communicate in a wireless local area network, comprising: a transceiver; and a processor operatively connected to the transceiver and configured to: transmit a plurality of request to send (RTS) frames to another station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through each of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth; receive, from the another station, at least one clear to send (CTS) frame as a response to the plurality of RTS frames through
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Art Unit: 2477

			at least one idle subchannel, the at least one CTS frame being received through the at least one idle subchannel; and transmit a data frame, wherein a number of the at least one idle subchannel is equal to or less than a number of the plurality of subchannels, wherein if the at least one CTS frame includes channel information indicating all of the at least one idle subchannel through which the at least one CTS frame is transmitted, the data frame is transmitted via the at least one idle subchannel indicated by the channel information, and wherein if the at least one CTS frame does not include the channel information, the data frame is transmitted via the plurality of subchannels indicated by the plurality of RTS frames.
Analysis Current CON 15357438 is similar to Patent 8989158 because the claims recites are similar in			

particular claim 6 and 8 of said patent recites “wherein a number of the at least one idle channel is equal or less than a number of plurality of subchannels” which is similar to the CON application. Further, the CON is similar to patent 9107222 and 9526114 for they are claiming a device relating to sending RTS/CTS frames in idle subchannels having a bandwidth of 20 MHz.

6. The device of claim 4, wherein the number of the plurality of subchannels is 2 or 4.

4. The device of claim 3, wherein the number of the plurality of subchannels is 2 or 4.

6. A device of claim 5, wherein the number of the plurality of subchannels is 2 or 4.

Analysis

All the claims in each application are similar because they claim the number of the subchannels to be 2 or 4.

Allowable Subject Matter

3. Claims 1-6 would be allowable if a Terminal Disclaimer is filed to overcome the Non-Statutory Double Patenting Rejections as set forth in this Office Action.

4. The following is a statement of reasons for the indication of allowable subject matter: As to independent claims 1 and 4 in combination with other limitations in the claims with their dependents, the prior arts of record do not specifically suggest in particular " wherein a number of the at least one idle subchannel through which the CTS frame is transmitted is less than a number of the plurality of subchannels through which the plurality of RTS frames are transmitted..”

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAEL ULYSSE whose telephone number is (571)272-1228. The examiner can normally be reached on Monday - Friday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag Shah can be reached on 571-272-3144. 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.

January 22, 2017
/JAEL ULYSSE/
Examiner, Art Unit 2477

/CHIRAG SHAH/
Supervisory Patent Examiner, Art Unit 2477

Docket No.: 5438-0208PUS4
(Patent)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application of:

Yong Ho SEOK

Application No.: 15/357,438

Confirmation No.: 8121

Filed: November 21, 2016

Art Unit: 2477

For: CHANNEL ACCESS METHOD FOR VERY
HIGH THROUGHPUT (VHT) WIRELESS
LOCAL ACCESS NETWORK SYSTEM AND
STATION SUPPORTING THE CHANNEL
ACCESS METHOD

Examiner: ULYSSE, JAE L
M

AMENDMENT UNDER 37 C.F.R. § 1.111

MS AMENDMENT

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

Dear Commissioner:

INTRODUCTORY COMMENTS

In reply to the Office Action dated January 31, 2017, the following amendments and remarks are respectfully submitted in connection with the above-identified application.

Amendments to the Claims; and

Remarks.

Attachment: Terminal Disclaimer

BIRCH, STEWART, KOLASCH & BIRCH, LLP

EHC/JDF/mmm

Ex. 1002 - TCL Indus Holdings Co., Ltd.
TCL Indus Holdings Co., Ltd v. LGE - IPR2023-00866

Page 17 of 33

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for transmitting data in a wireless communication system, the method comprising:

transmitting, by a first station, a plurality of request to send (RTS) frames to a second station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through a corresponding one of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth;

receiving, by the first station, at least one clear to send (CTS) frame in response to at least one of the plurality of RTS frames from the second station through at least one idle subchannel of the plurality of subchannels; and

transmitting, by the first station, a data frame to the second station after receiving the at least one CTS frame,

~~wherein, if~~wherein the at least one CTS frame includes channel information related to the at least one idle subchannel through which the CTS frame is transmitted by the second ~~station, station and~~ the data frame is transmitted through the at least one idle subchannel indicated by the channel information, and

wherein a number of the at least one idle subchannel through which the CTS frame is transmitted is less than a number of the plurality of subchannels through which the plurality of RTS frames are transmitted.

2. (Canceled)

3. (Canceled)

4. (Currently Amended) A device comprising:

a transceiver; and

a processor operatively connected to the transceiver and configured to:

instruct the transceiver to transmit a plurality of request to send (RTS) frames to a station through a plurality of subchannels, each of the plurality of RTS frames being transmitted through a corresponding one of the plurality of subchannels, each of the

plurality of subchannels having a 20 megahertz (MHz) bandwidth,

instruct the transceiver to receive at least one clear to send (CTS) frame in response to at least one of the plurality of RTS frames from the station through at least one idle subchannel of the plurality of subchannels, and

instruct the transceiver to transmit a data frame to the station after receiving the at least one CTS frame,

~~wherein, if~~wherein the at least one CTS frame includes channel information related to the at least one idle subchannel through which the CTS frame is transmitted by the ~~station,~~station and the data frame is transmitted through the at least one idle subchannel indicated by the channel information, and

wherein a number of the at least one idle subchannel through which the CTS frame is transmitted is less than a number of the plurality of subchannels through which the plurality of RTS frames are transmitted.

5. (Canceled)

6. (Canceled)

7. (New) The method of claim 1, wherein the number of the at least one idle subchannel is 1 or 2 when the number of the plurality of subchannels is 4.

8. (New) The method of claim 1, wherein the number of the at least one idle subchannel is 1 when the number of the plurality of subchannels is 2.

9. (New) The method of claim 1, wherein the first station is a Very High Throughput (VHT) non-Access Point (AP) station and the second station is a VHT AP station.

10. (New) The device of claim 4, wherein the number of the at least one idle subchannel is 1 or 2 when the number of the plurality of subchannels is 4.

11. (New) The device of claim 4, wherein the number of the at least one idle subchannel is 1 when the number of the plurality of subchannels is 2.

12. (New) The device of claim 4, wherein the device is a Very High Throughput (VHT) non-Access Point (AP) station and the station from which the plurality of RTS frames are received is a VHT AP station.

13. (New) A method for receiving data in a wireless communication system, the method comprising:

receiving, by a first station, a plurality of request to send (RTS) frames from a second station through a plurality of subchannels, each of the plurality of RTS frames being received through a corresponding one of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth;

transmitting, by the first station, at least one clear to send (CTS) frame in response to at least one of the plurality of RTS frames to the second station through at least one idle subchannel of the plurality of subchannels; and

receiving, by the first station, a data frame from the second station after transmitting the at least one CTS frame,

wherein the at least one CTS frame includes channel information related to the at least one idle subchannel through which the CTS frame is transmitted by the first station and the data frame is received through the at least one idle subchannel indicated by the channel information, and

wherein a number of the at least one idle subchannel through which the CTS frame is transmitted is less than a number of the plurality of subchannels through which the plurality of RTS frames are received.

14. (New) The method of claim 13, wherein the number of the at least one idle subchannel is 1 or 2 when the number of the plurality of subchannels is 4.

15. (New) The method of claim 13, wherein the number of the at least one idle subchannel is 1 when the number of the plurality of subchannels is 2.

16. (New) The method of claim 13, wherein the first station is a Very High Throughput (VHT) non-Access Point (AP) station and the second station is a VHT AP station.

17. (New) A device comprising:

a transceiver; and

a processor operatively connected to the transceiver and configured to:

instruct the transceiver to receive a plurality of request to send (RTS) frames from a station through a plurality of subchannels, each of the plurality of RTS frames being received through a corresponding one of the plurality of subchannels, each of the plurality of subchannels having a 20 megahertz (MHz) bandwidth,

instruct the transceiver to transmit at least one clear to send (CTS) frame in response to at least one of the plurality of RTS frames to the station through at least one idle subchannel of the plurality of subchannels, and

instruct the transceiver to receive a data frame from the station after transmitting the at least one CTS frame,

wherein the at least one CTS frame includes channel information related to the at least one idle subchannel through which the CTS frame is transmitted by the device and the data frame is received through the at least one idle subchannel indicated by the channel information, and

wherein a number of the at least one idle subchannel through which the CTS frame is transmitted is less than a number of the plurality of subchannels through which the plurality of RTS frames are received.

18. (New) The device of claim 17, wherein the number of the at least one idle subchannel is 1 or 2 when the number of the plurality of subchannels is 4.

19. (New) The device of claim 17, wherein the number of the at least one idle subchannel is 1 when the number of the plurality of subchannels is 2.

20. (New) The device of claim 17, wherein the device is a Very High Throughput (VHT) non-Access Point (AP) station and the station from which the plurality of RTS frames are received is a VHT AP station.

REMARKS

Status of the Claims

Claims 1, 4, and 7-20 are now pending. Claims 1, 4, 13, and 17 are independent.

Claims 2, 3, 5, and 6 have been canceled, claims 7-20 have been added, and the claims have been amended to clarify the features. These claims are fully supported by the original disclosure, e.g., Fig. 4, and the corresponding description in the filed specification (e.g., paragraphs [0049]-[0055]). Thus, Applicant believes no new matter is added and reconsideration of this application, as amended, is respectfully requested.

Allowable Subject Matter

The Examiner states that claims 1-6 would be allowable if the double patenting rejections are overcome. Applicant thanks the Examiner for the early indication of allowable subject matter in this application. A Terminal Disclaimer is herewith submitted to overcome the rejections. Thus, independent claims 1 and 4 should be in condition for allowance.

Obviousness-Type Double Patenting Rejection

Claims 1-6 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 6, and 8 of U.S. Patent No. 8,989,158. Claims 1-6 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 5, and 6 of U.S. Patent No. 9,107,222. Claims 1-6 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 of U.S. Patent No. 9,526,114. These rejections are respectfully traversed.

While not conceding the appropriateness of the Examiner's rejections, but merely to advance prosecution of the instant application, Applicant herewith submits a Terminal Disclaimer to overcome the rejections.

Accordingly, reconsideration and withdrawal of these rejections are respectfully requested.

New Claims

Claims 7-20 have been added for the Examiner's consideration. Independent claims 13 and 17 are directed to a method for receiving data in a wireless communication system, and a device. In particular, claims 13 and 17 recite similar features as in claims 1 and 4 in a varying scope, and thus are allowable for similar reasons as claims 1 and 4, respectively. Applicant submits that claims 7-9, 10-12, 14-16, and 18-20 depend directly from independent claims 1, 4, 13, and 17, respectively, and are therefore allowable based on their dependence from claims 1, 4, 13, and 17, respectively, each of which is believed to be allowable. In addition, claims 7-9, 10-12, 14-16, and 18-20 recite further features which are not disclosed or made obvious by the applied prior art references. Consideration and allowance of claims 7-20 are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all rejections in the Office Action and that they be withdrawn. It is believed that a full and complete response has been made to the Office Action, and as such, the present application is in condition for allowance.

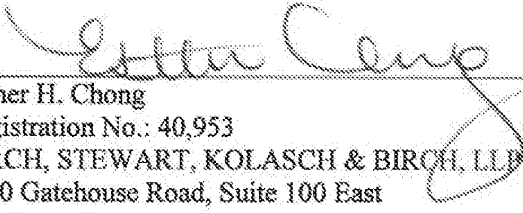
Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Justen D. Fauth, Registration No. 63,559, at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: MAY 01 2017

Respectfully submitted,

By


Esther H. Chong

Registration No.: 40,953

BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Road, Suite 100 East

P.O. Box 747

Falls Church, VA 22040-0747

703-205-8000

Attachment: Terminal Disclaimer

BIRCH, STEWART, KOLASCH & BIRCH, LLP


EHC/IDF/mm



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

2292 7590 06/08/2017
BIRCH STEWART KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
FALLS CHURCH, VA 22042-1248

EXAMINER

ULYSSE, JAE L M

ART UNIT

PAPER NUMBER

2477

DATE MAILED: 06/08/2017

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/357,438	11/21/2016	Yong Ho SEOK	5438-0208PUS4	8121

TITLE OF INVENTION: CHANNEL ACCESS METHOD FOR VERY HIGH THROUGHPUT (VHT) WIRELESS LOCAL ACCESS NETWORK SYSTEM AND STATION SUPPORTING THE CHANNEL ACCESS METHOD

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	09/08/2017

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)

2292 7590 06/08/2017
BIRCH STEWART KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
FALLS CHURCH, VA 22042-1248

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.
15/357,438	11/21/2016	Yong Ho SEOK	5438-0208PUS4	8121

TITLE OF INVENTION: CHANNEL ACCESS METHOD FOR VERY HIGH THROUGHPUT (VHT) WIRELESS LOCAL ACCESS NETWORK
SYSTEM AND STATION SUPPORTING THE CHANNEL ACCESS METHOD

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	09/08/2017

EXAMINER	ART UNIT	CLASS-SUBCLASS
ULYSSE, JAE L M	2477	370-338000

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.
15/357,438	11/21/2016	Yong Ho SEOK	5438-0208PUS4	8121
2292 7590 06/08/2017 BIRCH STEWART KOLASCH & BIRCH, LLP 8110 Gatehouse Road Suite 100 East FALLS CHURCH, VA 22042-1248			EXAMINER ULYSSE, JAEI M	
			ART UNIT 2477	PAPER NUMBER

DATE MAILED: 06/08/2017

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. 15/357,438	Applicant(s) SEOK, YONG HO	
	Examiner JAE L ULYSSE	Art Unit 2477	AIA (First Inventor to File) Status No

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

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

1. ☒ This communication is responsive to 05/01/2017.
☐ 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, 4, 7-20 numbered accordingly. 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 _____
---	---

/GREGORY SEFCHECK/ Primary Examiner, Art Unit 2477	/JAE L ULYSSE/ Examiner, Art Unit 2477
---	---

DETAILED ACTION

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

Response to Arguments

2. Applicant's arguments have been fully considered but are moot in light of Notice of Allowance generated herein.
3. In light of Applicant's submission of Terminal Disclaimer in response to the Non-Statutory Double Patenting Rejection; the Non-Statutory Double Patenting Rejection has been withdrawn thereto.
4. Claims 2, 3, 5, and 6 are currently cancelled.
5. Claims 7-20 are new.

Allowable Claims

1. Claims 1, 4, 7-20 are allowed and numbered accordingly.
2. The following is an examiner's statement of reasons for allowance: As to Independent Claims 1, 4, 13, and 17 in combination with other limitations in the claims along with their respective Dependent Claims the prior arts of record as listed in the PTO 892 form do not specifically suggest or render obvious in particular " wherein a number of the at least one idle subchannel through which the CTS frame is transmitted is less than a number of the plurality of subchannels through which the plurality of RTS frames are transmitted.." and " wherein a number of the at least one idle subchannel through which the CTS frame is transmitted is less than a number of the plurality of subchannels through which the plurality of RTS frames are received.."

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

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAEL ULYSSE whose telephone number is (571)272-1228. The examiner can normally be reached on Monday - Friday 8am-5pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Chirag Shah can be reached on 571-272-3144. 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.

May 31, 2017
/JAEL ULYSSE/
Examiner, Art Unit 2477

/GREGORY SEFCHECK/
Primary Examiner, Art Unit 2477