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NOTICE OF ALLOWANCE AND FEE(S) DUE

50735 7590 09/11/2019
AUSTIN RAPP
170 SOUTH MAIN STREET
SUITE 735
SALT LAKE CITY, UT 84101

EXAMINER

PATEL, JAY P

ART UNIT PAPER NUMBER

2466

DATE MAILED: 09/11/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/008,492	06/14/2018	Zhanping Yin	SLA3749	1000

TITLE OF INVENTION: PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	12/11/2019

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

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

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

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

PART B - FEE(S) TRANSMITTAL

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

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

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

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)

50735 7590 09/11/2019
AUSTIN RAPP
170 SOUTH MAIN STREET
SUITE 735
SALT LAKE CITY, UT 84101

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

Certificate of Mailing or Transmission

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

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/008,492	06/14/2018	Zhanping Yin	SLA3749	1000

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APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	12/11/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
PATEL, JAY P	2466	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 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____

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

3 _____

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

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

(A) NAME OF ASSIGNEE

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

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

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

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

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

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

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

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment. **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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50735	7590	09/11/2019	EXAMINER	
AUSTIN RAPP 170 SOUTH MAIN STREET SUITE 735 SALT LAKE CITY, UT 84101			PATEL, JAY P	
			ART UNIT	PAPER NUMBER
			2466	

DATE MAILED: 09/11/2019

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

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

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

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

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

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

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

Privacy Act Statement

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

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

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

Notice of Allowability	Application No. 16/008,492	Applicant(s) Yin et al.	
	Examiner JAY P PATEL	Art Unit 2466	AIA (FITF) 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 claims filed in prelim. amend. on 11/30/2018.
☐ 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 19-23. 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)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.	6. ☒ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.	

/JAY P PATEL/ Primary Examiner, Art Unit 2466	
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DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Allowable Subject Matter

Claims 19-23 are allowed.

The following is an examiner's statement of reasons for allowance:

In regards to the claims, the cited prior art fails to teach individually or in combination, for the CBG based HARQ-ACK corresponding to the PDSCH which is scheduled in a common search space (CSS), the transmitting circuitry is configured to report one HARQ-ACK bit for the transport block, and for the CBG based HARQ-ACK corresponding to the PDSCH which is scheduled in a UE-specific search space (USS), the transmitting circuitry is configured to report HARQ-ACK bits of all CBGs.

Prior art Jo et al. (US Publication 2019/0245648 A1) teaches resource sets for control signal transmission that can be configured for a common search space and a user specific search space (see paragraph 49). A transport block may include multiple code block groups and the UE transmits an ACK for each CBG (see paragraph 195). When the network receives the HARQ-ACK information, the network transmits CBG (see paragraph 207). However no specific mention of HARQ-ACK in the search spaces is taught.

Prior art Park et al. (US Publication 2019/0230685 A1) teach, a default PUCCH allocation being implemented when HARQ-ACK corresponding to a Common search space is transmitted (see paragraph 281). Park also teaches, the base station may

configure, through a semi-static higher layer signal (e.g., RRC signaling), a single (UE specific) PUCCH type or a plurality of (UE specific) PUCCH types for a PUCCH carrying HARQ-ACK information for PDSCH(s) scheduled through a specific DL assignment. For a PDSCH transmitted before the (UE specific) PUCCH type is configured for the UE (or before the RRC connection) or a PDSCH (and/or Msg4 transmission) scheduled through the DCI transmitted in the UE (group) common search space, the base station may deliver information about a single default PUCCH type or a plurality of default PUCCH types to be used by the UE (See paragraph 289).

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 JAY P PATEL whose telephone number is (571)272-3086. The examiner can normally be reached on M-F 9:30-6.

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, Faruk Hamza can be reached on 571-272-7969. 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.

/JAY P PATEL/
Primary Examiner, Art Unit 2466

Notice of References Cited	Application/Control No. 16/008,492	Applicant(s)/Patent Under Reexamination Yin et al.	
	Examiner JAY P PATEL	Art Unit 2466	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-20190245648-A1	08-2019	JO; Soonki	H04L1/0026	1/1
*	B	US-20190230685-A1	07-2019	PARK; Hanjun	H04L5/00	1/1
*	C	US-20180368110-A1	12-2018	Ying; Kai	H04W72/04	1/1
*	D	US-20180278368-A1	09-2018	Kim; Yuchul	H04L1/1829	1/1
*	E	US-20180287745-A1	10-2018	SUN; Jing	H04L1/1864	1/1
*	F	US-20190199477-A1	06-2019	PARK; Hanjun	H04L1/00	1/1
*	G	US-20180167932-A1	06-2018	Papasakellariou; Aris	H04L1/1671	1/1
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS					
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	N				
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	P				
	Q				
	R				
	S				
	T				

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

Issue Classification 	Application/Control No. 16/008,492	Applicant(s)/Patent Under Reexamination Yin et al.
	Examiner JAY P PATEL	Art Unit 2466

CPC						
Symbol					Type	Version
H04W	/	72	/	0413	F	2013-01-01
H04L	/	1	/	1861	I	2013-01-01
H04W	/	72	/	0486	I	2013-01-01

CPC Combination Sets							
Symbol				Type	Set	Ranking	Version
	/		/				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	5	
/JAY P PATEL/ Primary Examiner, Art Unit 2466	05 September 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	19	7

Issue Classification 	Application/Control No. 16/008,492	Applicant(s)/Patent Under Reexamination Yin et al.
	Examiner JAY P PATEL	Art Unit 2466

INTERNATIONAL CLASSIFICATION			
CLAIMED			
H04W		72	04

NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

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

NONE (Assistant Examiner) (Date)		Total Claims Allowed: 5	
/JAY P PATEL/ Primary Examiner, Art Unit 2466 (Primary Examiner) (Date)		05 September 2019 O.G. Print Claim(s) 19	O.G. Print Figure 7

Issue Classification 	Application/Control No. 16/008,492	Applicant(s)/Patent Under Reexamination Yin et al.
	Examiner JAY P PATEL	Art Unit 2466

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original

NONE	Total Claims Allowed:	
(Assistant Examiner)	(Date)	5
/JAY P PATEL/ Primary Examiner, Art Unit 2466	05 September 2019	O.G. Print Claim(s)
(Primary Examiner)	(Date)	19
		O.G. Print Figure
		7

<i>Search Notes</i> 	Application/Control No. 16/008,492	Applicant(s)/Patent Under Reexamination Yin et al.
	Examiner JAY P PATEL	Art Unit 2466

CPC - Searched*		
Symbol	Date	Examiner
(H04W72/0413 or H04W72/0486 or H04L1/1861 or H04L5/0057 or H04L1/1854 or H04L5/0055 or H04L5/0091 or H04L5/0053 or H04L5/001); PLUS TEXT	09/04/2019	JPP

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

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

Search Notes		
Search Notes	Date	Examiner
EAST(USPGPUB, USPAT, USOCR, FPRS, EPO, JPO, DERWENT, IBM_TDB); PLUS TEXT	09/04/2019	JPP
EAST INVENTORSHIP SEARCH	09/04/2019	JPP
IEEE XPLOER SEARCH	09/05/2019	JPP

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	EAST INTERFERENCE SEARCH	09/05/2019	JPP

/JAY P PATEL/ Primary Examiner, Art Unit 2466	
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EAST Search History**EAST Search History (Interference)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L10	1	(PDSCH and ("code block groups" or "code block group" or cbg\$1) and ("HARQ-ACK" or "HARQ ACK" or "HARQACK") and ((user adj2 space) or USS)).clm.	US-PGPUB; USPAT	OR	OFF	2019/09/05 12:06

9/ 5/ 2019 12:07:29 PM**C:\Users\jpatel1\Documents\EAST\Workspaces\16008492.wsp**

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	
	Filing Date	
	First Named Inventor	Zhanping Yin
	Art Unit	
	Examiner Name	
	Attorney Docket Number	SLA3749

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2017018839	WO	A1	2017-02-02	Samsung Electronics Co., Ltd.		
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/JAY P PATEL/

09/05/2019

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Zhanping Yin	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	SLA3749	

1	Samsung, "Resource Allocation for PUCCH with HARQ-ACK", 3GPP TSG RAN WG1 Meeting #89, Hangzhou, P.R. China, R1-1708009, 19 May 2017
2	Intel Corporation, "Resource allocation for NR uplink control channel", 3GPP TSG RAN WG1 Meeting #88bis, Spokane, USA, R1-1704753, 07 Apr 2017

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EXAMINER SIGNATURE

Examiner Signature	/JAY P PATEL/	Date Considered	09/05/2019
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Zhanping Yin	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	SLA3749	

CERTIFICATION STATEMENT

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

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

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Wesley L. Austin/	Date (YYYY-MM-DD)	2018-06-14
Name/Print	Wesley L. Austin	Registration Number	42273

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

/JAY P PATEL/

09/05/2019

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

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

/JAY P PATEL/

09/05/2019

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.P.P/

Bibliographic Data

Application No: 16/008,492

Foreign Priority claimed: ☐ Yes ☒ No

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

Verified and Acknowledged: /JAY P PATEL/

Examiner's Signature

JPP

Initials

Title:

PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT
ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
06/14/2018	370	2466	SLA3749
RULE			

APPLICANTS

Sharp Kabushiki Kaisha, Sakai City, JAPAN

FG Innovation Company Limited, New Territories, CHINA

INVENTORS

Zhanping Yin Vancouver, WA, UNITED STATES

Toshizo Nogami Chiba, JAPAN

CONTINUING DATA

This application is a CON of PCT/US2018/037377 06/13/2018

This application has PRO of 62520520 06/15/2017

FOREIGN APPLICATIONS

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07/03/2018

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170 SOUTH MAIN STREET

SUITE 735

SALT LAKE CITY, UT 84101

UNITED STATES

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	229	((("Yin") near3 ("Zhanping"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/05 10:47
L2	417	((("Nogami") near3 ("Toshizo"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/05 10:47
L3	1	L1 and (PDSCH and ("code block groups" or "code block group" or cbg\$1) and ("HARQ-ACK" or "HARQ ACK" or "HARQACK") and ((user adj2 space) or USS)).clm.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/05 10:49
L4	1	L2 and (PDSCH and ("code block groups" or "code block group" or cbg\$1) and ("HARQ-ACK" or "HARQ ACK" or "HARQACK") and ((user adj2 space) or USS)).clm.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/05 10:49
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S2	0	S1 and PDSCH and (code adj2 group\$1) and ("HARQ-ACK" or "HARQ ACK" or "HARQACK") and ("common search space" or CSS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 12:53
S3	1	S1 and PDSCH and ("HARQ-ACK" or "HARQ ACK" or "HARQACK") and ("common search space" or CSS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 12:54
S4	0	S1 and PDSCH and (cbg\$1) and ("HARQ-ACK" or "HARQ ACK" or "HARQACK") and ("common search space" or CSS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 12:57
S5	0	S1 and PDSCH and ("code block groups" or "code block group") and ("HARQ-ACK" or "HARQ ACK" or "HARQACK") and ("common search space" or CSS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 12:58
S6	50	PDSCH and ("code block groups" or "code block group" or cbg\$1) and ("HARQ-ACK" or "HARQ ACK" or "HARQACK") and ("common search space" or CSS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 12:59
S7	12	S6 and (@rlad< "20170615" or	US-PGPUB;	OR	OFF	2019/09/03

		@ad< "20170615")	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			12:59
S8	0	S7 and (("specific search space" or USS) with ("HARQ-ACK" or "HARQ ACK" or "HARQACK") with (cbgs or "code block groups"))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 13:02
S9	1	S7 and (("specific search space" or USS) same ("HARQ-ACK" or "HARQ ACK" or "HARQACK") same (cbgs or "code block groups"))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 13:03
S10	1	S7 and (("specific search space" or USS) same2 ("HARQ-ACK" or "HARQ ACK" or "HARQACK") same2 (cbgs or "code block groups"))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 13:04
S11	2	((("specific search space" or USS) same2 ("HARQ-ACK" or "HARQ ACK" or "HARQACK") same2 (cbgs or "code block groups"))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 13:05
S12	124524	(H04W72/0413 or H04W72/0486 or H04L1/1861 or H04L5/0057 or H04L1/1854 or H04L5/0055 or H04L5/0091 or H04L5/0053 or H04L5/001).cpc. and (@rlad< "20170615" or @ad< "20170615")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 15:37
S13	0	S12 and ((report\$4 or indicat\$4) with ("HARQ-ACK" or "HARQ ACK" or "HARQACK") with ("specific search space" or USS) with ("code block groups" or cbg\$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 15:39
S14	7	S12 and ((report\$4 or indicat\$4) with ("HARQ-ACK" or "HARQ ACK" or "HARQACK") with ("code block groups" or cbg\$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 15:40
S15	7	S14 and (@rlad< "20170615" or @ad< "20170615")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/03 15:40
S16	229	((("Yin") near3 ("Zhanping"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/03 15:41
S17	416	((("Nogami") near3 ("Toshizo"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/03 15:41

EAST Search History

S18	3	S16 and ((report\$4 or indicat\$4) with ("HARQ-ACK" or "HARQ ACK" or "HARQACK") with ("code block groups" or cbg\$1)).clm.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/03 15:42
S19	3	S17 and ((report\$4 or indicat\$4) with ("HARQ-ACK" or "HARQ ACK" or "HARQACK") with ("code block groups" or cbg\$1)).clm.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/03 15:42

9/ 5/ 2019 12:07:16 PM**C:\ Users\ jpatel1\ Documents\ EAST\ Workspaces\ 16008492.wsp**

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16008492
	Filing Date	2018-06-14
	First Named Inventor	Zhanping Yin
	Art Unit	
	Examiner Name	
	Attorney Docket Number	SLA3749

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	1	20180176943	A1	2018-06-21	Takeda et al.			
	2	20170041123	A1	2017-02-09	Yang et al.			
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Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2013071028	WO	A2	2013-05-16	Qualcomm Incorporated		
	2	2016208727	WO	A1	2016-12-29	NTT Docomo, Inc.		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16008492
	Filing Date	2018-06-14
	First Named Inventor	Zhanping Yin
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	Examiner Name	
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	International Search Report and Written Opinion issued for PCT Application No. PCT/US2018/037377 on 26 Sep 2018	
	2	Ericsson, "On PUCCH resource allocation", 3GPP TSG-RAN WG1 #89, Hangzhou, China, R1-1709087, 19 May 2017	
	3	MediaTek Inc., "On multiple HARQ bits per TB and feedback mechanism", 3GPP TSG RAN WG1 Meeting #88, Athens, Greece, R1-1702738, 17 Feb 2017	
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Examiner Signature	/JAY P PATEL/		Date Considered 09/05/2019
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	Examiner Name	
	Attorney Docket Number	SLA3749

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See attached certification statement.

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

A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Wesley L. Austin/	Date (YYYY-MM-DD)	2018-10-18
Name/Print	Wesley L. Austin	Registration Number	42273

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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/JAY P PATEL/

09/05/2019

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.P.P/

Appl. No. 16/008,492
Preliminary Amendment dated November 30, 2018

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	16/008,492	Confirmation No.:	1000
Applicant	:	Sharp Laboratories of America, Inc.		
First Named Inventor	:	Zhanping Yin		
Filed	:	June 14, 2018		
Art Unit	:	2414		
Examiner	:	Ricky Quoc Ngo		
Docket No.	:	SLA3749		
Customer No.	:	50735		

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

PRELIMINARY AMENDMENT

Sir:

Pursuant to 37 C.F.R. § 1.115, Applicant submits a preliminary amendment as set forth

below:

Amendments to the Claims are reflected in the listing of claims which begins on page 4 of this paper.

Remarks begin on page 5 of this paper.

Attorney Docket No.: 17843/US; SLA3749
Customer No.: 50735

Amendments to the Claims

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

Listing of Claims:

1-18. (Canceled)

19. (New) A user equipment (UE), comprising:
receiving circuitry configured to receive a physical downlink shared channel (PDSCH) that includes code block groups (CBGs) of a transport block; and
transmitting circuitry configured to transmit CBG based HARQ-ACK, wherein
for the CBG based HARQ-ACK corresponding to the PDSCH which is scheduled in a common search space (CSS), the transmitting circuitry is configured to report one HARQ-ACK bit for the transport block,
for the CBG based HARQ-ACK corresponding to the PDSCH which is scheduled in a UE-specific search space (USS), the transmitting circuitry is configured to report HARQ-ACK bits of all CBGs.

20. (New) The UE of claim 19, wherein determining circuitry configured to determine a physical uplink control channel (PUCCH) resource for transmission of the CBG based HARQ-ACK which PUCCH resource is one of a plurality PUCCH resources defined for different payload sizes.

21. (New) A base station (gNB), comprising:
- sending circuitry configured to send a physical downlink shared channel (PDSCH) that includes code block groups (CBGs) of a transport block; and
 - receiving circuitry configured to receive CBG based HARQ-ACK, wherein
 - for the CBG based HARQ-ACK corresponding to the PDSCH which is scheduled in a common search space (CSS), the receiving circuitry is configured to receive one HARQ-ACK bit for the transport block,
 - for the CBG based HARQ-ACK corresponding to the PDSCH which is scheduled in a UE-specific search space (USS), the receiving circuitry is configured to receive HARQ-ACK bits of all CBGs.
22. (New) A communication method of a user equipment (UE) comprising:
- receiving a physical downlink shared channel (PDSCH) that includes code block groups (CBGs) of a transport block; and
 - transmitting CBG based HARQ-ACK, wherein
 - for the CBG based HARQ-ACK corresponding to the PDSCH which is scheduled in a common search space (CSS), one HARQ-ACK bit for the transport block is transmitted,
 - for the CBG based HARQ-ACK corresponding to the PDSCH which is scheduled in a UE-specific search space (USS), HARQ-ACK bits of all CBGs are transmitted.
23. (New) A communication method of a base station comprising:
- sending a physical downlink shared channel (PDSCH) that includes code block groups (CBGs) of a transport block; and
 - receiving CBG based HARQ-ACK, wherein
 - for the CBG based HARQ-ACK corresponding to the PDSCH which is scheduled in a common search space (CSS), one HARQ-ACK bit for the transport block is received,
 - for the CBG based HARQ-ACK corresponding to the PDSCH which is scheduled in a UE-specific search space (USS), HARQ-ACK bits of all CBGs are received.

REMARKS

By this paper, claims 1-18 are being canceled. Claims 19-23 are being added. Support for these amendments is provided by at least paragraphs [0025]-[0026], [0028]-[0029], [0045], [0092], and [0168] of Applicant's originally filed specification. Applicant respectfully requests that these claim amendments be entered under 37 C.F.R. § 1.115.

Respectfully submitted,

/Wesley L. Austin/

Wesley L. Austin
Reg. No. 42,273
Attorney for Applicant

Date: November 30, 2018

AUSTIN RAPP
170 South Main Street, Suite 735
Salt Lake City, Utah 84101
Telephone: (801) 537-1700

Electronic Patent Application Fee Transmittal				
Application Number:		16008492		
Filing Date:		14-Jun-2018		
Title of Invention:		PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)		
First Named Inventor/Applicant Name:		Zhanping Yin		
Filer:		Wesley L. Austin/Jessamy Newton		
Attorney Docket Number:		SLA3749		
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:				
INDEPENDENT CLAIMS IN EXCESS OF 3	1201	1	460	460
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				460

Electronic Acknowledgement Receipt	
EFS ID:	34451807
Application Number:	16008492
International Application Number:	
Confirmation Number:	1000
Title of Invention:	PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)
First Named Inventor/Applicant Name:	Zhanping Yin
Customer Number:	50735
Filer:	Wesley L. Austin/Jessamy Newton
Filer Authorized By:	Wesley L. Austin
Attorney Docket Number:	SLA3749
Receipt Date:	30-NOV-2018
Filing Date:	14-JUN-2018
Time Stamp:	15:18:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$460
RAM confirmation Number	120318INTEFSW15210100
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		17843US_PreliminaryAmendment_3292-2-325.pdf	25352	yes	4
			2a27c0a88f1f5a17f13cb0e42784c5a3127decce		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Preliminary Amendment		1	1	
	Claims		2	3	
	Applicant Arguments/Remarks Made in an Amendment		4	4	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	31071	no	2
			c42386e247999eb32b1a0a2342d2ecf45dd9d278		
Warnings:					
Information:					
Total Files Size (in bytes):			56423		

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.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 16/008,492		Filing Date 06/14/2018		☐ To be Mailed	
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO									
APPLICATION AS FILED - PART I									
		(Column 1)			(Column 2)				
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A			
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A			
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A			
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =		*		x \$100 =			
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		x \$460 =			
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).							
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL			
APPLICATION AS AMENDED - PART II									
		(Column 1)			(Column 2)	(Column 3)			
AMENDMENT	11/30/2018	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 5	Minus	** 20	= 0	x \$100 =		0	
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 3	= 1	x \$460 =		460	
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE		460	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	*	Minus	**	=	x \$0 =			
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x \$0 =			
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						LIE			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/VIKKI GRAY/			
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".									
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.									

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

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

Electronic Acknowledgement Receipt	
EFS ID:	34450818
Application Number:	16008492
International Application Number:	
Confirmation Number:	1000
Title of Invention:	PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)
First Named Inventor/Applicant Name:	Zhanping Yin
Customer Number:	50735
Filer:	Wesley L. Austin/Jessamy Newton
Filer Authorized By:	Wesley L. Austin
Attorney Docket Number:	SLA3749
Receipt Date:	30-NOV-2018
Filing Date:	14-JUN-2018
Time Stamp:	14:46:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	SLA3749_RequestToChangeAp plicant_3292-2-325.pdf	14337	no	1
			2de182123fcee0af0ccd7fe098ff17aac5c36b OFF		
Warnings:					

Information:					
2	Application Data Sheet	SLA3749_CorrectedApplicationDataSheet_3292-2-325.pdf	139534 ba176154c2d248407f58319fcc1537fa649b62de	no	8
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
3	Power of Attorney	SLA3749_PowerOfAttorney_SKK_3292-2-325.pdf	247862 cbe69bb073b3b9ef1e2ad6938cd3ced2e5dfec2d	no	3
Warnings:					
Information:					
Total Files Size (in bytes):			401733		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Appl. No. 16/008,492
Request to Change Applicant

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	16/008,492	Confirmation No.: 1000
Applicant	:	Sharp Laboratories of America, Inc.	
First Named Inventor	:	Zhanping Yin	
Filed	:	June 14, 2018	
Art Unit	:	(not yet assigned)	
Examiner	:	(not yet assigned)	
Docket No.	:	SLA3749	
Customer No.	:	50735	

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

REQUEST TO CHANGE APPLICANT

Sir:

Applicant hereby requests under 37 CFR 1.46(c) to change the Applicant from Sharp Laboratories of America, Inc. to Sharp Kabushiki Kaisha. Enclosed herewith is a corrected Application Data Sheet and Power of Attorney in support of this request.

Respectfully submitted,

/Wesley L. Austin/

Wesley L. Austin
Reg. No. 42,273
Attorney for Applicant

Date: November 30, 2018

AUSTIN RAPP
170 South Main Street, Suite 735
Salt Lake City, Utah 84101
Telephone: (801) 537-1700

Attorney Docket No.: SLA3749
Customer No.: 50735

CORRECTED

PTO/AIA/14 (02-18)

Approved for use through 11/30/2020. OMB 0651-0032

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SLA3749
		Application Number	16/008,492 XXXXXXXXXXXXXXXXXXXX
Title of Invention	PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

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

Inventor Information:

Inventor 1					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Zhanping		Yin		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Vancouver	State/Province	WA	Country of Residence	US
Mailing Address of Inventor:					
Address 1		2104 SE 187th Avenue			
Address 2					
City	Vancouver	State/Province	WA		
Postal Code	98683	Country	US		
Inventor 2					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Toshizo		Nogami		
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service					
City	Chiba	Country of Residence	JP		
Mailing Address of Inventor:					
Address 1		2-22 Utase, Unit 1-303			
Address 2		Mihama-ku, Chiba-shi			
City	Chiba	State/Province			
Postal Code	261-0013	Country	JP		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					Add

Correspondence Information:

CORRECTED

PTO/AIA/14 (02-18)

Approved for use through 11/30/2020. OMB 0651-0032

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SLA3749
		Application Number	16/008,492
Title of Invention	PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)		

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

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

Customer Number	50735		
Email Address	uspto@austin-rapp.com	Add Email	Remove Email

Application Information:

Title of the Invention	PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)		
Attorney Docket Number	SLA3749	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	18	Suggested Figure for Publication (if any)	17

Filing By Reference:

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

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

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

Publication Information:

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

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

Representative Information:

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

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	50735		

CORRECTED

PTO/AIA/14 (02-18)

Approved for use through 11/30/2020. OMB 0651-0032

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SLA3749
		Application Number	16/008,492
Title of Invention	PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)		

Domestic Benefit/National Stage Information:

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

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

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	PCTUS2018037377	2018-06-13
Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Claims benefit of provisional	62520520	2017-06-15

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

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

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

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

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

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

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SLA3749
		Application Number	16/008,492
Title of Invention	PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)		

Authorization or Opt-Out of Authorization to Permit Access:

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

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

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

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

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

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

CORRECTED

PTO/AIA/14 (02-18)

Approved for use through 11/30/2020. OMB 0651-0032

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	SLA3749
	Application Number	16/008,492
Title of Invention	PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant 1			
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
Clear			
☒ Assignee	☐ Legal Representative under 35 U.S.C. 117	☐ Joint Inventor	
☐ Person to whom the inventor is obligated to assign.		☐ Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	~~Sharp Laboratories of America, Inc.~~ Sharp Kabushiki Kaisha		
Mailing Address Information For Applicant:			
Address 1	5750 NW Pacific Rim Boulevard 1, Takumi-cho		
Address 2			
City	~~Gamas~~ Sakai-ku, Sakai City, Osaka	State/Province	~~WA~~
Country	~~US~~ JP	Postal Code	~~98607~~ 590-8522
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button.			

Assignee Information including Non-Applicant Assignee Information:

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

CORRECTED

PTO/AIA/14 (02-18)

Approved for use through 11/30/2020. OMB 0651-0032

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SLA3749
		Application Number	16/008,492
Title of Invention	PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)		

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	Given Name	Middle Name	Family Name	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		State/Province	
Country ⁱ		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

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

Signature	/Wesley L. Austin/		Date (YYYY-MM-DD)	2018-11-30	
First Name	Wesley L.	Last Name	Austin	Registration Number	42273

Additional Signature may be generated within this form by selecting the Add button.

CORRECTED

PTO/AIA/14 (02-18)

Approved for use through 11/30/2020. OMB 0651-0032

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SLA3749
		Application Number	16/008,492 xxxxxxxxxxxx
Title of Invention	PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)		

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

Privacy Act Statement

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

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

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

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

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

I hereby appoint:



Practitioners associated with Customer Number:

50735

OR



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

Name	Registration Number

Name	Registration Number

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

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



The address associated with Customer Number:

50735

OR

☐	Firm or Individual Name			
	Address			
	City	State	Zip	
	Country			
	Telephone	Email		

Assignee Name and Address: Sharp Kabushiki Kaisha
1 Takumi-cho, Sakai-ku
Sakai City, Osaka 590-8522, Japan

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

SIGNATURE of Assignee of Record

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

Signature	<i>Mototaka Taneya</i>	Date	2/7, Oct. 2017
Name	Mototaka Taneya	Telephone	360 834-8754
Title	Managing Officer, BU President, Corporate Research & Development BU		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Zhanping Yin et al.

Application No./Patent No.: 16/008,492 Filed/Issue Date: June 14, 2018

Titled: PHYSICAL UPLINK CONTROL CHANNEL (PUCCH) FORMAT ADAPTATION FOR 5th GENERATION (5G) NEW RADIO (NR)

Sharp Kabushiki Kaisha, a corporation

(Name of Assignee)

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

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

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

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

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

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

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

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

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

1. From: Zhanping Yin et al. To: Sharp Laboratories of America, Inc.

The document was recorded in the United States Patent and Trademark Office at
Reel 046262, Frame 0286, or for which a copy thereof is attached.

2. From: Sharp Laboratories of America, Inc. To: Sharp Kabushiki Kaisha

The document was recorded in the United States Patent and Trademark Office at
Reel 047119, Frame 0955, or for which a copy thereof is attached.

[Page 1 of 2]

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

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

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

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

4. From: _____ To: _____

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

5. From: _____ To: _____

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

6. From: _____ To: _____

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

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

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

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

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

/Wesley L. Austin/

Signature

Wesley L. Austin

Printed or Typed Name

November 30, 2018

Date

42273

Title or Registration Number