

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	GOVERNMENT OF THE UNITED STATES	08/04/2017
RECEIVING PARTY DATA		
Name:	SYRACUSE UNIVERSITY	
Street Address:	224-226 LYMAN HALL	
City:	SYRACUSE	
State/Country:	NEW YORK	
Postal Code:	13224	
PROPERTY NUMBERS Total: 2		
	Property Type	Number
	Application Number:	62240006
	PCT Number:	US2016056581
CORRESPONDENCE DATA		
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NAME OF SUBMITTER:	DAVID L. NOCILLY	
SIGNATURE:	/david l. nocilly/	
DATE SIGNED:	10/25/2018	
Total Attachments: 7		
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PATENT

REEL: 047306 FRAME: 0894

ASSIGNMENT AGREEMENT

This Agreement, by and between the Government of the United States of America, as represented by the Secretary of the Air Force, (hereinafter referred to as "AIR FORCE"), and Syracuse University (hereinafter referred to as "SU"), having a place of business located at Office of Research, Lyman Hall, Syracuse, NY 13244-1270.

WITNESSETH THAT:

WHEREAS, Biao Chen, while employed by SU, and Michael Gans and John Matyjas, while employed by the AIR FORCE jointly made an invention ("Invention") entitled METHOD AND APPARATUS FOR FAST AND EFFICIENT MASSIVE MIMO-OFDM DATA COMMUNICATIONS described in U.S. Provisional Patent Application 62/240,006 "Efficient Channel Estimation and Symbol Detection for Massive MIMO-OFDM" filed on October 12, 2015;

WHEREAS, the entire right, title, and interest of Michael Gans and John Matyjas in and to said Invention including foreign rights is assigned to the AIR FORCE;

WHEREAS, the entire right, title, and interest of Biao Chen in and to said Invention including foreign rights is assigned to SU;

WHEREAS, SU desires to obtain title from AIR FORCE in and to said Invention, as assigned to AIR FORCE from the inventors Michael Gans and John Matyjas;

WHEREAS, SU filed a provisional patent application serial number 62/240,006 on October 12, 2015 in the U.S. Patent and Trademark Office on said Invention;

WHEREAS, SU filed a non-provisional patent application entitled "Efficient Channel Estimation and Symbol Detection for Massive MIMO-OFDM", serial number PCT/US16/56581 on October 12, 2016 in the U.S. Patent and Trademark Office, with priority to 62/240,006;

WHEREAS, it is the goal of AIR FORCE and SU to promote the utilization of inventions arising from federally supported research or development;

WHEREAS, to achieve the mutual goals of AIR FORCE and SU, AIR FORCE desires to assign and SU desires to acquire the entire right, title, and interest of AIR FORCE in and to said Invention; and

WHEREAS this Agreement is authorized by law including P.L. 96-517, P.L. 98-620, P.L. 99-502 and 35 USC §202(e).

NOW, THEREFORE, in consideration of the premises, and the agreements, covenants, and conditions herein contained, the parties agree in these five pages as follows:

I. DEFINITIONS

a. "THE ASSIGNED INVENTION" means the invention entitled Efficient Channel Estimation and Symbol Detection for Massive MIMO-OFDM described in U.S. Provisional Patent Application 62/240,006 filed on October 12, 2015, and including the invention entitled Efficient Channel Estimation and Symbol Detection for Massive MIMO-OFDM, described in U.S. Non-Provisional Patent Application PCT/US16/56581 claiming priority to 62/240,006 and filed on October 12, 2016, and any other U.S. or foreign non-provisional patent application or applications filed thereon, or U.S. or foreign patent or patents issued thereon, including all divisions, continuations, continuations-in-part (subject to any intervening rights), if any, reissues or extensions thereof. See Appendix A.

b. "Effective date of the Agreement" means the later of the dates of execution by the authorized representative of the AIR FORCE and SU.

II. ASSIGNMENT GRANT

A. Patent rights.

AIR FORCE hereby assigns to SU its entire right, title, and interest throughout the world in and to THE ASSIGNED INVENTION, reserving to the Government of the United States a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced on behalf of the United States the subject matter of THE ASSIGNED INVENTION throughout the world, and agrees to execute necessary documentation for recordation of such assignment, including the attached patent assignment, Exhibit A.

B. Licensing.

- (i) SU will actively seek one or more licensees for the commercial development of THE ASSIGNED INVENTION on for the benefit of the parties.
- (ii) AIR FORCE and SU will use all reasonable efforts to cooperate with each other with respect to the licensing of THE ASSIGNED INVENTION, including exchanging information on licensing inquiries received, exchanging marketing materials, and providing other reasonable assistance to the other party when requested.

III. COSTS AND CONDITIONS OF REASSIGNMENT

A. SU shall pay all U.S. and foreign fees or costs, including patent application filing fees, prosecution fees, and patent maintenance fees, licensing fees or commissions, and any other costs incurred by SU relating to THE ASSIGNED INVENTION.

B. As a condition of this Agreement, SU confirms that it will file a non-provisional patent application on THE ASSIGNED INVENTION, as referenced above. SU will not abandon any patent application or cease to pay maintenance fees on any patent on THE ASSIGNED INVENTION without providing AIR FORCE written notice at least [REDACTED] days before the expiration of any time period in which action must be taken to prosecute the patent application or

in which a maintenance fee must be paid without extra fee or surcharge. SU further agrees, upon request and at no cost to AIR FORCE, to assign to AIR FORCE, or other party whom AIR FORCE directs, the entire right, title, and interest in THE ASSIGNED INVENTION if the SU intends to abandon or cease to maintain any patent application or patent based on the THE ASSIGNED INVENTION.

IV. CONSIDERATION

- A. SU agrees to pay to AIR FORCE [REDACTED] of any royalties or other income received by UNIVERSITY, per annum as a consequence of the ASSIGNED INVENTION on or before 31 December of each year following the effective date of this Agreement. The net amount of royalties and other income payable to AIR FORCE shall be determined after deduction therefrom, by SU, of any direct and documented patent expenses by SU related to the ASSIGNED INVENTION. Said patent related expenses are limited to the costs associated with patent application preparation, prosecution, and USPTO and other fees, including issue and maintenance fees.
- B. SU agrees to pay AIR FORCE [REDACTED] payment of [REDACTED] of executing the first license of the ASSIGNED INVENTION.
- C. In consideration for the rights granted in Article II (A), SU agrees to pay to AIR FORCE [REDACTED] of all net income (gross minus administrative fee of [REDACTED] derived from sublicense agreement(s) granted in any licensed territory.
- D. Patent Cost Reimbursement: SU and AIR FORCE shall be entitled to patent cost reimbursement from net income (gross minus administrative fee of [REDACTED] derived prior to calculating and paying AIR FORCE pursuant to Article IV (A) above.
- E. Administration Fee: In consideration for securing and administering patent license agreements under Article II (B), SU shall be entitled to retain an administration fee of [REDACTED] of gross income derived after patent cost reimbursement pursuant to Article IV (B), but prior to paying AIR FORCE pursuant to Article IV (A) above.
- F. All payment to AIR FORCE under this Article shall be made by check payable to "Treasurer of the United States" and mailed to the address in Article VII within [REDACTED] days after receiving license payments from licensee.
- G. Each payment shall include an accounting and description of all royalties or other income received. If no payment is owing, the accounting shall so state. SU shall maintain, for [REDACTED] books of account showing all royalties or other income received or receivable. AIR FORCE may [REDACTED]

V. TERM

This Agreement will have force and effect until all patents on THE ASSIGNED INVENTION have expired, except, however, that SU's obligations to pay royalties or other

VI. ADDITIONAL REQUIRED PROVISIONS UNDER 35 U.S.C. §202(c)

This Agreement is made subject to the policies, rights, and obligations of the parties set forth in Title 35, United States Code, Chapter 18, including, but not limited to, the following:

A. The assignment grant of Article II is made subject to the march-in-rights of AIR FORCE under 35 U.S.C. §203.

B. Unless waived by AIR FORCE under the provisions of 35 U.S.C. §204, an exclusive right to make, use or sell THE ASSIGNED INVENTION shall not be granted to any person or entity unless such person or entity agrees that any products embodying THE ASSIGNED INVENTION or produced through the use of THE ASSIGNED INVENTION will be manufactured substantially in the United States.

VI. EXCLUSIONS

A. Enforcement of any patent on THE ASSIGNED INVENTION against third party infringers shall solely

The extent of enforcement, if any, shall be at the sole discretion recoveries made as a result of said enforcement shall be shared with consistent with the terms set forth in Article IV, only after recovering all the expenses incurred related to enforcement

B. Neither SU nor AIR FORCE warrants the validity of any patent on THE ASSIGNED INVENTION or scope of the claims, or that practice of THE ASSIGNED INVENTION will not result in infringement of any existing patent.

C. This Agreement shall not be construed to confer immunity from the antitrust laws or from a charge of patent misuse, nor shall it be construed to waive any applicable sovereign immunity.

D. SU agrees not to create the appearance that AIR FORCE or the Government the service. AIR FORCE and the Government of the United States shall not be connected directly or impliedly with any advertising or promotional program for THE ASSIGNED INVENTION or any resulting product or service, except that it may be generally stated that THE ASSIGNED INVENTION has been obtained in part by assignment from the AIR FORCE.

VII. ADDRESSES

The address for AIR FORCE for receiving payments, notices, reports and for any other purposes under this Agreement is:

TTO (ATTN: ORTA)
AFRL/RIBA
26 Electronic Parkway
Rome, NY 13441-4514

with a copy to:

TTO (ATTN: Boggs)
AFRL/SB
2275 D Street, Bld 16
Wright-Patterson AFB, OH 45433

The address for SU for this Agreement is:

Office of Technology Transfer
Syracuse University
Lyman Hall (Floor
Syracuse, NY 1324-1270
Attention: Director

VIII. EFFECTIVE DATE

This Agreement shall have an effective date of the later of the dates of the following signatures by SU and AIR FORCE.

This section intentionally left blank

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by these duly authorized representatives.

FOR THE GOVERNMENT OF THE UNITED STATES

By: 

DANIEL S. GODDARD, SES
Director, Information Directorate

Date: 08/09/17

FOR SYRACUSE UNIVERSITY

By: 

PETER A. VANABLE
Interim Vice President for Research

Date: 2/6/17

APPENDIX A
Invention

SU ID#	Application #	Title	Filing Date	Filed by.
100807	62/240,006	Efficient Channel Estimation and Symbol Detection for Massive MIMO-OFDM	October 12, 2015	SU
100807	PCT/US16/56581	Efficient Channel Estimation and Symbol Detection for Massive MIMO-OFDM	October 12, 2016	SU