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102830345

U.S. DEPARTMENT OF COMMERCE Patent and Trademark Office

To the Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof. Name of conveying party(ies): **Execution Date** Name and address of receiving party(ies): (Month/Day/Year) Regents of the University of Minnesota Georgios B. Giannakis 08/27/2004 450 McNamara Alumni Center Xiaoli Ma 07/30/2004 200 Oak St. SE Minneapolis, MN 55455-2070 Additional name(s) of conveying party(ies) attached? Yes No Additional name(s) & address(es) attached?

Yes

No Nature of conveyance: Submission Type: Assignment Merger \boxtimes New Resubmission (Non-Recordation): Security Agreement Change of Name Document ID# Other: Correction of PTO Error: Reel # Corrective Document: Reel # Frame # This document is being filed with a new patent application on This document is to be recorded against the following patent application or patent: Patent Application No.(s) Patent No.(s) 10/850,825 Additional numbers attached? Yes No Name and address of party to whom correspondence concerning Total number of applications and patents involved: document should be mailed: Kent J. Sieffert Name: Total fee (37 CFR 3.41): Address: Shumaker & Sieffert, P.A. Enclosed 8425 Seasons Parkway, Suite 105 Authorized to be charged to deposit account St. Paul, MN 55125 Please charge any additional fees or credit any overpayments to our Deposit account number: 50-1778 DO NOT USE THIS SPACE Statement and signature: To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document. August 31, 2004 Name of Person Signing Reg. No.: 41,312 09/07/2014 LMUELLER 00000056 10850825 Total number of pages of the attached conveyance document including any attachments: 2 01 FC:802 40.00 Do not detach this portion Mail documents to be recorded with required cover sheet information to: Commissioner of Patents and Trademarks

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> PATENT REEL: 015750 FRAME: 0174

Attorney Docket No.: 1008-020US01

ASSIGNMENT

For valuable consideration, we, Georgios B. Giannakis of 2561 Abbey Hill Dr., Minnetonka, MN 55305 and Xiaoli Ma of 1449 Richland Road, Apt. 7J, Auburn, AL 36832, hereby assign to: Regents of the University of Minnesota, having a place of business at: 450 McNamara Alumni Center, 200 Oak St. SE, Minneapolis, MN 55455-2070; and its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in the inventions and improvements which are the subject of an application for United States Patent signed by us, entitled CHANNEL ESTIMATION FOR BLOCK TRANSMISSIONS OVER TIME-AND FREQUENCY-SELECTIVE WIRELESS FADING CHANNELS, filed May 21, 2004, and assigned U.S. Serial Number 10/850,825; this assignment including said application, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and we authorize the Assignee to apply in all countries in our name or in its own name for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements; and we agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment.

Date: 08/27/04

Georgios B. Giannakis

Diaoli Ma

Date: 07/30/04

RECORDED: 09/03/2004

Xiaoli Ma

PATENT REEL: 015750 FRAME: 0175