05-09-2007



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PATENTS ONLY			OFFICE OF PUBLIC
1. Name of party or p	103403	3930	MAY -8 PM
Name of party or	parties conveying an	2. Name and addre	ess of party or pathers NCE Soll st:
Tarik Muharemovid Zukang Shen		a Delawar 7839 Chur Dallas, Te P.O. Box	truments Incorporated re corporation rchill Way, MS 3999 exas 75251, 655474, MS 3999 exas 75265
3. Description of the	interest conveyed:	Other:	
X AssignmeMergerChange ofSecurity	`Name		
Execution Date: Ap	oril 27, 2007; April 27, 2007		
4. Application number(s) or patent number(s). Additional sheet attached? YES NO_X		If the document is being filed together with a new application, the execution date of the application is:	
	A. Patent Application no.(s): Serial No.		
	Name and address of party to whom orrespondence concerning this cover sheet		ications and/or patents over sheet: 1
Name: Ron Neerings	3	7. Amount of fee authorized to be charged: \$40.00	
Reg. No. 34,227 TEXAS INSTRUME USPTO Customer No	NTS INCORPORATED imber 23494		required fee may be charged, at credited to our deposit
	my knowledge and belief, thopy submitted is a true copy	of the original documents of the original do	a Thell

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40.00 DA

PATENT

REEL: 019279 FRAME: 0524

ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made, the said application having been executed on the date set forth below; and

WHEREAS, TEXAS INSTRUMENTS INCORPORATED, a corporation organized and existing under the laws of the State of Delaware, having a place of business at 7839 Churchill Way, MS 3999, Dallas, Texas 75251, P.O. Box 655474, MS 3999, Dallas, Texas 75265, is desirous of acquiring my entire right, title and interest in and to the said invention, and to the said application and any Letters Patent that may issue thereon;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to the said TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, my entire right, title and interest in and to the said invention and in to the said application and all patents which may be granted therefor, and all divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner of Patents and Trademarks to issue all patents for said invention, or patent resulting therefrom, insofar as my interest is concerned, to the said TEXAS INSTRUMENTS INCORPORATED, as assignee of my entire right, title and interest.

I also hereby sell and assign to TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said TEXAS INSTRUMENTS INCORPORATED, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention, and at the expense of said assignee company, testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid said TEXAS INSTRUMENTS INCORPORATED, its successors, assigns and nominees to obtain and enforce proper patent protection for said invention in all countries.

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year;

TITLE OF INVENTION	METHODS AND APPARATUS TO ALLOCATE REFERENCE SIGNALS IN WIRELESS COMMUNICATION SYSTEMS			
SIGNATURE OF INVENTOR AND NAME	Tarik Muharemovic	Zukang Spen	(3)	
DATE	04/27/2007	04/27/2007		
RESIDENCE (City, State)	7601 Churchill Way, Apt. 1726 Dallas, TX 75251	707 Kindred Lane Richardson, TX 75080		
DATE APPLICATION EXECUTED	04/27/2007	04/27/2007		

After recordation, please return Assignment to:

Ron Neerings
Texas Instruments Incorporated
P.O. Box 655474, M/S 3999
Dallas, TX 75265

PATENT REEL: 019279 FRAME: 0525

RECORDED: 05/08/2007