PATENT ASSIGNMENT COVER SHEET

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NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
HYO JIN LEE	08/07/2014
YOUN SUN KIM	08/07/2014
JU HO LEE	08/07/2014
YOUNG BUM KIM	08/07/2014
HYOUNG JU JI	08/07/2014

RECEIVING PARTY DATA

Name:	SAMSUNG ELECTRONICS CO., LTD	
Street Address:	129, SAMSUNG-RO	
Internal Address:	YEONGTONG-GU, SUWON-SI	
City:	GYEONGGI-DO	
State/Country:	untry: KOREA, REPUBLIC OF	
Postal Code:	443-742	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14454560

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ATTORNEY DOCKET NUMBER:	SAMS07-60046	
NAME OF SUBMITTER:	WILLIAM A. MUNCK	
SIGNATURE:	/William A. Munck/	
DATE SIGNED:	08/07/2014	

Total Attachments: 2

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PATENT REEL: 033490 FRAME: 0800

<u>ASSIGNMENT</u>

WHEREAS, We, Hyo Jin Lee, resident of Suwon-si, Gyeonggi-do, Republic of Korea, citizen of Republic of Korea, s Youn Sun Kim. Resident of Seongnam-si, Gyeonggi-do, Republic of Korea, citizen of Republic of Korea, Ju Ho Lee, resident of Suwon-si, Gyeonggi-do, Republic of Korea, citizen of Republic of Korea, Young Bum Kim, resident of Dongdaemun-gu, Seoul, Republic of Korea, citizen of Republic of Korea, and Hyoung Ju Ji, resident of Songpa-gu, Seoul, Republic of Korea, citizen of Republic of Korea, have invented certain new and useful improvements in a "METHOD AND APPARATUS FOR TRANSMITTING AND RECEIVING FEEDBACK INFORMATION IN MOBILE COMMUNICATION SYSTEM BASED ON 2 DIMENSIONAL MASSIVE MIMO" disclosed in an application for United States Letters Patent (Application Serial No. __/_____, filed on ________, said application having been executed concurrently herewith;

WHEREAS, SAMSUNG ELECTRONICS CO., LTD, a corporation organized under the laws of the Republic of Korea, having a place of business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-742, Republic of Korea (hereinafter referred to as "ASSIGNEE"), is desirous of acquiring our entire right, title and interest in and to the invention, and in and to the said application and any Letters Patent that may issue thereon;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, we do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the full and exclusive right, title and interest in and to said invention and in and to said application and all patents which may be granted therefor, and all divisions, reissues, substitutions, continuations, continuations-in-part and extensions thereof; We authorize William A. Munck of Munck Wilson Mandala, LLP to insert in the parenthesis above the application number and filing date of said application when known; and we hereby authorize and request the Commissioner of Patents and Trademarks to issue all patents for said invention, or patents resulting therefrom, insofar as our interest is concerned, to the said ASSIGNEE of our entire right, title and interest.

We also hereby sell and assign to said ASSIGNEE, its successors, assigns and legal representatives the full and exclusive rights, title and interest to the invention disclosed in said application throughout the world, including the right to file applications and obtain patents, utility models, industrial models and designs for said invention in its own name throughout the world including all rights of priority, all rights to publish cautionary notices reserving ownership of said invention and all rights to register said invention in appropriate registries; and we further agree to execute any and all powers of attorney, applications, assignments, declarations, affidavits, and any other papers in connection therewith necessary to perfect such rights, title and interest in ASSIGNEE, its successors, assigns and legal representatives.

We hereby further agree that we will communicate to said ASSIGNEE, or to its successors, assigns and legal representatives, any facts known to us respecting any improvements; and, at the expense of said ASSIGNEE, to testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, continuation-in-part, reissue and substitute applications, and make all lawful oaths, and generally do everything possible to vest title in said ASSIGNEE and to aid said ASSIGNEE, its successors, assigns and legal representatives to obtain and enforce proper protection for said invention in all countries.

Date:	August 7, 2014	gh,
Date:	August 17, 2014	HYO JIN LEE
Date:	August 7, 2014	YOUN SUN KIM JU HO LEE
Date:	August 1, 2014	227CZ
Date:	August 7, 2014	YOUNG BUM KIM HYOUNG JU JI

RECORDED: 08/07/2014