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U.S. DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office
Attorney Docket No. 1403-62



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OMB No. 0651-0027 (exp. 5/31/2002)

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To the Honorable Commissioner

1. Name of conveying party(ies):
Zhang-Yong MA
Young-II KIM

Additional name(s) of conveying party(ies) attached? Yes No

2. Name and address of receiving party(ies)
Name:
Samsung Electronics Co., Ltd.
416, Maetan-dong, Yeongtong-gu,
Suwon-si
Gyeonggi-do, Republic of Korea

Additional name(s) & address(es) attached? Yes No

3. Nature of conveyance:
 Assignment Merger
 Security Agreement Change of Name
 Other _____

Execution Date: **January 26, 2007**

4. Application number(s) or patent number(s):
If this document is being filed together with a new application, the execution date of the application is: _____
A. Patent Application No.(s)
11/636,799 filed December 11, 2006

Additional numbers attached? Yes No

B. Patent No.(s)

5. Name and address of party to whom correspondence concerning document should be mailed:
Name: **Paul J. Farrell, Esq.**
The Farrell Law Firm
333 Earle Ovington Blvd., Suite 701
Uniondale, New York 11553
U.S. PTO Customer No. 66547

6. Total number of applications and patents involved: 1
7. Total fee (37 CFR 3.41).....\$ **\$40.00**
 Enclosed
 Authorized to be charged to deposit account

8. Deposit account number: **50-4053**

(Attach duplicate copy of this page if paying by deposit account)

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9. 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.
Paul J. Farrell, Reg. No. 33,494
Name of Person Signing

Paul J. Farrell
Signature
2/20/07
Date

Total number of pages including cover sheet, attachments, and documents: 4

Mail documents to be recorded with required cover sheet information to:
Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

02/28/2007 11:00 AM
01 FC 8021

RECORDATION FORM COVER SHEET (CONTINUED)
PATENTS ONLY

Attorney Docket No. 1403-62

2. Name and address of receiving party(ies) (CONTINUED)

2nd Assignee: **Electronics and Telecommunications Research Institute**
161, Gajeong-dong, Yuseong-gu, Daejeon 305-350, Korea

3rd Assignee: **KT Corporation**
206, Jungja-dong, Bundang-gu, Seongnam-city, Gyeonggi-do, Korea

4th Assignee: **SK Telecom Co., Ltd.**
99, Seorin-dong, Jongro-gu, Seoul, Korea

5th Assignee: **Hanaro Telecom., Inc.**
Shindongah Fire & Marine Insurance Building 43,
Taepyeongno2-ga, Jung-gu, Seoul, Korea

Additional name(s) & address(es) attached? Yes No

AS A BELOW NAMED INVENTOR, I, and each of us, individually hereby declare that: IN CONSIDERATION of the sum of TEN (\$10.00) dollars or the equivalent thereof, and other good and valuable consideration, the receipt of which from the hereinafter named Assignee is hereby acknowledged, I do hereby sell, assign and forever grant and convey unto:

1st ASSIGNEE: Samsung Electronics Co., Ltd.

416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea

2nd ASSIGNEE: Electronics and Telecommunications Research Institute

161, Gajeong-dong, Yuseong-gu, Daejeon 305-350, Korea

3rd ASSIGNEE: KT Corporation

206, Jungja-dong, Bundang-gu, Seongnam-city, Kyeongki-do 463-711, Korea

4th ASSIGNEE: SK Telecom Co., Ltd

99, Seorin-dong, Jongro-gu, Seoul 110-728, Korea

5th ASSIGNEE: Hanaro Telecom., Inc.

Shindongah Fire & Marine Insurance Building 43, Taepyeongno2-ga, Jung-gu, Seoul 100-733, Korea

Who is my Assignee, and to the successes and assigns of my Assignee, all my right, title and interest, in and for the United States of America and all other countries, including all rights of priority, in and to the invention entitled:

TITLE: METHOD AND APPARATUS FOR ESTIMATING TIMING ERROR AND FREQUENCY OFFSET OF MIMO SYSTEM

invented by me (if only one inventor is named below) or us (if more than one inventor is named below) and described in an application for a United States patent the specification of which is either attached hereto or otherwise accompanies this Assignment or indicates an attorney docket no. 1403-62 (OPP 053245 US), or is more particularly identified as:

- executed on even date herewith, or
 Serial No. 11/636,799 filed in the U.S. Patent & Trademark Office on December 11, 2006, or
 executed on _____,

and in and to all United States patents which may be granted thereon and therefore, and in and to all certificates of corrections, divisions, continuations, continuations-in-part, reissued and re-examined patents, and to any extensions thereof, said interest being the entire ownership of the patent when granted, to be held and enjoyed by said SAMSUNG ELECTRONICS CO., LTD., ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE, KT CORPORATION, SK TELECOM CO., LTD. and HANARO TELECOM my Assignee, its successors, assigns or other legal representatives, to the full end of the term, terms, or any extension or renewal thereof, for which said patent or patents may be granted, as fully and entirely as the same would have been held and enjoyed by me or us if this assignment, sale and conveyance had not been made;

AND I hereby covenant and agree to sign and execute any further documents or instruments which may from time-to-time be either necessary, lawful, proper or requested by the Assignee, in the prosecution of the above-named application or in the preparation and prosecution of any certificate of correction, division, continuation, continuation-in-part, reissue, re-examination, in any amendment, extension, or interference proceeding, whether administrative or judicial, or otherwise, to secure the title hereto in said Assignee:

AND I do hereby authorize and request the Commissioner of Patents and Trademarks to issue said Patent or Patents to the Assignee, and I hereby appoint as my, or our attorney, and authorize and request Paul J. Farrell, Reg. No. 33,494, to insert on this Assignment any further identification or to complete such identification which may be either necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

And I further covenant that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

IN WITNESS WHEREOF, I and we have set our hands and seals on the dates written beside my and our respective names:

<u>INVENTOR(S)</u>	<u>Date Signed</u>	<u>Witness(es)</u>
1) <u>Zhangyong Ma</u> MA, Zhang-Yong	(Seal) <u>January 26, 2009</u>	<u>Myo-Shin</u> KIM, Myo-Shin
2) <u>Gyung-il Kim</u> KIM, Gyung-Il	(Seal) <u>January 26, 2009</u>	<u>Sun</u> HAN, Hye-Sun