PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|----------------|----------------|
| Seung II MYONG | 05/24/2010 |
| Hoe-Sung YANG | 05/24/2010 |
| Dong-Boem SHIN | 05/24/2010 |
| Nak Seon SEONG | 05/24/2010 |
| Heyung Sub LEE | 05/26/2010 |
| Cheol Sig PYO | 05/24/2010 |

RECEIVING PARTY DATA

| Name: | Electronics & Telecommunications Research Institute | |
|-----------------|---|--|
| Street Address: | 161 Gajeong-dong, Yuseong-gu | |
| City: | Daejeon | |
| State/Country: | REPUBLIC OF KOREA | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 12746431 |

CORRESPONDENCE DATA

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|-------------------------|-------------|
| NAME OF SUBMITTER: | EuiHoon Lee |

PATENT

REEL: 024488 FRAME: 0592

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Total Attachments: 3
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PATENT REEL: 024488 FRAME: 0593

IP20070919A 투허범인무한

ASSIGNMENT

I/We, MYONG, Seung II, YANG, Hoe-Sung, SHIN, Dong-Beom, SEONG, Nak Seon, LEE, Heyung Sub, and PYO, Cheol Sig, in consideration of One Dollar and other valuable consideration paid to me/us by

Electronics & Telecommunications Research Institute

having its principal place of business at 161 Gajeong-dong, Yuseong-gu, Dacjeon, REPUBLICK OF KOREA, the receipt of which is hereby acknowledged, do hereby sell, assign and transfer unto said

Electronics & Telecommunications Research Institute

its successors and assigns, the entire interest for the United States of America and all foreign countries including all rights of priority under the International Convention for the Protection of Industrial Property in a certain invention or improvement in

MULTISTAGE CHANNEL ESTIMATION METHOD AND APPARATUS

| describe | d ir | an application | |
|-----------|------|--|--|
| | | executed by us of even date herewith and about to be filed | |
| |] | Serial No | , filed on |
| | | | emark Office, and in all Letters Patent of the United |
| States an | nd a | ll foreign countries whic | h may or shall be granted on said invention, or any part |
| thereof, | or o | on said application, or an | y divisional, continuing, reissue or other applications |
| hased in | wh | ole or in part thereon | |

And I/we agree, for myself/ourselves and my/our executor(s) and administrator(s), with said assignee and its successors and assigns but at its or their expense and charges, hereafter to execute all applications, amended specifications, deed or other instrument, and to do all acts necessary or proper to secure the grant of Letters Patent in the United States and in all other countries to said assignee, with specifications and claims in such form as shall be approved by the counsel of said assignee and to vest and confirm in said assignce, its successors and assigns, the legal title to all such patents.

And I/we do hereby authorize and request the Commissioner of Patents and Trademarks of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said assignee, its successors and assigns.

And I/we do further hereby grant the attorneys/agents of Lahive & Cockfield, LLP, the power to insert on this Assignment the filing date and/or application number of said application.

| 13 (194) | |
|----------------------------|------|
| By: MYONG, Seung II | |
| Date: May. 24. 2010 | |
| Witnesses: | |
| Witness 1 | Date |
| Witness 2 | Date |
| | |
| By: YANG, Hoe-Sung | |
| Date: <u>May. 24. 2010</u> | |
| Witnesses: | |
| Witness 1 | Date |
| Witness 2 | Date |
| By: SHIN, Dong-Beom | |
| Date: | |
| Witnesses: | |
| Witness 1 | Date |
| Witness 2 | Date |

| By: | |
|---------------------|------|
| SEONG, Nak Seon | |
| Date: May 24, 20/0 | |
| Witnesses: | |
| Witness 1 | Date |
| Witness 2 | Date |
| la- | |
| By: | |
| Date: May, 29, 20/0 | |
| Witnesses: | |
| Witness 1 | Date |
| Witness 2 | Date |
| By: PYO, Cheol Sig | |
| Date: | |
| Witnesses: | |
| Witness 1 | Date |
| Witness 2 | Date |

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RECORDED: 06/04/2010