## 502158241 12/11/2012

## PATENT ASSIGNMENT

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

## CONVEYING PARTY DATA

| Name  | Execution Date |
|---|----------------|
| ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE | 12/11/2012     |

## RECEIVING PARTY DATA

| Name:           | ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE |  |
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| City:           | Seoul  |  |
| State/Country:  | KOREA, REPUBLIC OF   |  |

#### PROPERTY NUMBERS Total: 1

| Property Type  | Number  |
|----------------|---------|
| Patent Number: | 7848218 |

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Total Attachments: 2

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PATENT REEL: 029446 FRAME: 0159 7848218

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# UNITED STATES PATENT RIGHTS, OR UNITED STATES PLUS ALL FOREIGN PATENT RIGHTS

# ASSIGNMENT

WHEREAS, ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE, a corporation organized and existing under the laws of the REPUBLIC OF KOREA, having its principal place of business at 161 Gajeong-dong, Yusong-gu, Dajeon-city, Republic of Korea (hereinafter referred to as "ASSIGNOR"), is the owner of the entire right, title and interest in the following United States Patent:

| Title: <u>VIRTUAL MULTI-ANTENNA METHOD FOR OFDM SYSTEM AND OFDM-BASED CELLULAR SYSTEM</u> |
|---|
| U.S. Patent No.: 7,848,218  |
| Application No.: <u>12/064,206</u>  |
| PCT Filing Date: August 18, 2006  |

WHEREAS, ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE, a corporation organized and existing under the laws of the Country of the REPUBLIC OF KOREA, having a place of business at 161 Gajeong-dong, Yusong-gu, Dajeon-city, Republic of Korea; and Chung-Ang University Industry-Academy Cooperation Foundation, a corporation organized and existing under the laws of Country of the REPUBLIC OF KOREA, having a place of business at 221, Heukseok-dong, Dongjak-gu, Seoul, Republic of Korea are desirous of acquiring an interest in the United States and all foreign countries, in and to the said Letters Patent;

NOW THEREFORE, TO ALL WHOM IT MAY CONCERN, be it known that for good and valuable consideration, the receipt of which is hereby acknowledged, I, the said ASSIGNOR, have assigned and transferred, and hereby assign and transfer unto the said ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE an undivided 80% interest in and to said Patent in the United States and in all foreign countries, including priority rights, as fully set forth and described in said Patent, and the said Chung-Ang University Industry-Academy

PATENT REEL: 029446 FRAME: 0160 ASSIGNMENT U.S. Patent No. 7,848,218

Cooperation Foundation an undivided 20% interest in and to said invention in the United States and in all foreign countries, including priority rights, as fully set forth and described in said Patent; and I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent that may be issued upon any and all revivals, refilings, continuations, continuations-in-part, divisions and reissues from the application of said Patent, to the said ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE and Chung-Ang University Industry-Academy Cooperation Foundation (collectively hereinafter referred to as the "ASSIGNEES"), for the sole use and behoof of ASSIGNEES, its successors and assigns; and I do hereby agree that the said ASSIGNEES, may apply for foreign Letters Patent on the invention of said Patent and that I will execute all papers necessary in connection with the United States and foreign applications when called upon to do so by the said ASSIGNEES, its successors or assigns, and that I will, at the cost and expense of the said ASSIGNEES fully assist and cooperate in all matters in connection with the United States and foreign applications and patents issuing thereon.

The undersigned declare that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of said Patent.

Date: December 11, 20/2 [sign above]

Name: <u>Alara Kan</u>

Title: Director

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Kile Park Goekjian Reed & McManus PLLC