

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT												
NATURE OF CONVEYANCE:	ASSIGNMENT												
CONVEYING PARTY DATA													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Name</th> <th style="text-align: center;">Execution Date</th> </tr> </thead> <tbody> <tr> <td>Jun-Woo KIM</td> <td>05/23/2007</td> </tr> <tr> <td>Su-Chang CHAE</td> <td>05/23/2007</td> </tr> <tr> <td>Young-Ha LEE</td> <td>05/23/2007</td> </tr> <tr> <td>Eon-Young HONG</td> <td>05/23/2007</td> </tr> <tr> <td>Youn-Ok PARK</td> <td>05/23/2007</td> </tr> </tbody> </table>	Name	Execution Date	Jun-Woo KIM	05/23/2007	Su-Chang CHAE	05/23/2007	Young-Ha LEE	05/23/2007	Eon-Young HONG	05/23/2007	Youn-Ok PARK	05/23/2007	
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Jun-Woo KIM	05/23/2007												
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Young-Ha LEE	05/23/2007												
Eon-Young HONG	05/23/2007												
Youn-Ok PARK	05/23/2007												
RECEIVING PARTY DATA													
Name:	Samsung Electronics Co., Ltd.												
Street Address:	416, Maetan-dong, Yeongtong-gu,												
City:	Suwon-si, Gyeonggi-do												
State/Country:	KOREA, REPUBLIC OF												
Name:	Electronics and Telecommunications Research Institute												
Street Address:	161, Gajeong-dong, Yuseong-gu,												
City:	Daejeon-City												
State/Country:	KOREA, REPUBLIC OF												
Postal Code:	305-350												
Name:	KT Corporation												
Street Address:	Jungja-dong, Bundang-gu,												
City:	Seongnam-city, Kyeonggi-do												
State/Country:	KOREA, REPUBLIC OF												
Postal Code:	463-711												
Name:	SK TELECOM CO., LTD												
Street Address:	99, Seorin-dong, Jongro-gu,												
City:	Seoul												
State/Country:	KOREA, REPUBLIC OF												
Postal Code:	110-110												

OP \$40.00 11721136

500291762

PATENT
REEL: 019397 FRAME: 0162

Name:	KTFreetel Co., Ltd
Street Address:	7-18, Sincheon-dong, Songpa-gu,
City:	Seoul
State/Country:	KOREA, REPUBLIC OF

Name:	HANARO TELECOM, INC
Street Address:	Shindongah Fire & Marine Insurance Building
Internal Address:	43, Taepyeongno2-ga, Jung-gu,
City:	Seoul
State/Country:	KOREA, REPUBLIC OF
Postal Code:	100-733

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	11721136

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:	0204-0003
NAME OF SUBMITTER:	/Maeng-Ho Shin/

Total Attachments: 5

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RECORDATION FORM COVER SHEET
PATENTS ONLY

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

1. Name of conveying party(ies)

Jun-Woo KIM, Su-Chang CHAE, Young-Ha LEE,
Eon-Young HONG, and Youn-Ok PARK

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

3. Nature of conveyance/Execution Date(s):

Execution Date(s) May 23, 2007

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Joint Research Agreement
☐ Government Interest Assignment
☐ Executive Order 9424, Confirmatory License
☐ Other _____

2. Name and address of receiving party(ies)

Name: Samsung Electronics Co., Ltd.

Internal Address: _____

Street Address: 416, Maetan-dong, Yeongtong-gu

City: Suwon-city

State: Gyeonggi-do

Country: Republic of Korea Zip: _____

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

4. Application or patent number(s):

☐ This document is being filed together with a new application.

A. Patent Application No.(s)

11/721,136

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

5. Name and address to whom correspondence concerning document should be mailed:

Name: Maeng-Ho Shin

Internal Address: _____

Street Address: 1730 M Street, NW, Suite 807

City: Washington

State: District of Columbia Zip: 20036

Phone Number: 202-293-0804

Fax Number: 202-403-3587

Email Address: usdocketing@ssaiplaw.com

6. Total number of applications and patents involved: One

7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00

- ☒ Authorized to be charged by credit card
☐ Authorized to be charged to deposit account
☐ Enclosed
☐ None required (government interest not affecting title)

8. Payment Information

a. Credit Card Last 4 Numbers 4899
Expiration Date 02/09

b. Deposit Account Number _____

Authorized User Name _____

9. Signature:

/Maeng-Ho SHIN/ Reg. #53859

June 7, 2007

Signature

Date

Maeng-Ho Shin

Name of Person Signing

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

5

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

Additional name and address of receiving parties:

Name: **Electronics and Telecommunications Research Institute**

Address: **161, Gajeong-dong, Yuseong-gu, Daejeon 305-350, Republic of Korea**

Name: **KT Corporation**

Address: **206, Jungja-dong, Bundang-gu, Seongnam-city, Kyeonggi-do 463-711, Republic of Korea**

Name: **SK TELECOM Co., LTD.**

Address: **99, Seorin-dong, Jongro-gu, Seoul 110-110, Republic of Korea**

Name: **KTFreetel Co., LTD.**

Address: **7-18, Sincheon-dong, Songpa-gu, Seoul, Republic of Korea**

Name: **HANARO TELECOM, INC.**

Address: **Shindongah Fire & Marine Insurance Building 43, Taepyeongno2-ga, Jung-gu, Seoul 100-733, Republic of Korea**

Assignment

WHEREAS, the following inventors, namely 1) **KIM, Jun-Woo**, 2) **CHAE, Su-Chang**, 3) **LEE, Young-Ha**, 4) **HONG, Eon-Young**, and 5) **PARK, Youn-Ok**, all citizens of the Republic of Korea and residing respectfully at 1) Yongsin Evervill 306, 118-20, Sinseong-dong, Yuseong-gu, Daejeon-city 305-150, Republic of Korea, 2) Dungji Apt. 104-802, Dunsan-dong, Seo-gu, Daejeon-city 302-120, Republic of Korea, 3) Yeolmae Maeul Apt. 403-1403, 858, Jijok-dong, Yuseong-gu, Daejeon-city 404-252, Republic of Korea, 4) Expo Apt. 208-1303, Jeonmin-dong, Yuseong-gu, Daejeon-city 305-761, Republic of Korea, and 5) Cheonggu Narae Apt. 101-1002, Jeonmin-dong, Yuseong-gu, Daejeon-city 305-390, Republic of Korea (hereinafter called "Assignors"), having made or discovered certain new, useful and non-obvious improvements in an invention having a working title of:

SUBCARRIER ALLOCATION APPARATUS AND METHOD, SUBCARRIER DE-ALLOCATION APPARATUS AND METHOD IN OFDM SYSTEM,

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on 06/07/2007, and assigned Serial No. 11/721,136; and,

WHEREAS, **Samsung Electronics Co., Ltd.**, a corporation duly organized under the laws of the Republic of Korea, located and doing business at 416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, **Electronics and Telecommunications Research Institute**, a research institute duly organized under the laws of the Republic of Korea, located and doing business at 161, Gajeong-dong, Yuseong-gu, Daejeon 305-350, Republic of Korea, **KT Corporation**, a corporation duly organized under the laws of the Republic of Korea, located and doing business at 206, Jungja-dong, Bundang-gu, Seongnam-city, Gyeonggi-do 463-711, Republic of Korea, **SK TELECOM CO., LTD.**, a corporation duly organized under the laws of the Republic of Korea, located and doing business at 99, Seorin-dong, Jongro-gu, Seoul 110-110, Republic of Korea, **KTFreetel Co., Ltd.**, a corporation duly organized under the laws of the Republic of Korea, located and doing business at 7-18, Sincheon-dong, Songpa-gu, Seoul, Republic of Korea, and **HANARO TELECOM, INC.**, a corporation duly organized under the laws of the Republic of Korea, located and doing business at Shindongah Fire & Marine Insurance Building 43, Taepyeongno2-ga, Jung-gu, Seoul 100-733, Republic of Korea (hereinafter called "Assignees"), is desirous of acquiring the entire right, title and interest therein;

NOW, THEREFORE, BE IT KNOWN that for and in good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors do hereby sell, assign and transfer unto said Assignees the entire and exclusive worldwide right, title and interest in and to said inventions and discoveries disclosed in said application, and in and to said application, any and all substitutions, divisions, provisionals, conversions of provisionals and continuations thereof, and in and to all Letters Patent, United States and foreign, that may be granted for said inventions and discoveries, and in and to all extensions, renewals and reissues thereof; and the right to file any foreign application and/or claim priority under the provisions of any international treaty or convention arising from this application or any divisional, continuing, substitute or reissue application therefrom. The aforesaid assignment includes the right in and to all income, royalties, damages and payments, now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale, assignment and transfer had not been made.

Assignors covenant and agree, without further compensation to said Assignors but at Assignees' expense:

- a. to execute:

Attorney Docket No.:
Client Docket No.:

- i. all papers to be used in connection with this application and any divisional, continuing, substitute or reissue application thereof, as the Assignees may deem necessary or expedient, and
- ii. all papers in connection with any interference, litigation, mediation, arbitration or other proceeding relating to this application or any divisional, continuing, substitute or reissue application thereof, as may be necessary or expedient;
- b. to cooperate with the Assignees in every way possible in obtaining evidence and going forward in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof;
- c. to communicate to the Assignees any facts relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof, including evidence for any interference, litigation, mediation, arbitration or other proceeding relating to said invention, whenever requested;
- d. to testify in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof whenever requested; and
- e. to perform all other affirmative acts which may be necessary or desirable to secure full and complete protection of the inventions and discoveries or that may be necessary or desirable to vest in Assignees the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignees to record title.

Assignors hereby authorize and request the United States Patent and Trademark Office or any other issuing authority to issue any and all Letters Patent that may be granted upon this invention and/or this application or any divisional, continuing, substitute or reissue application thereof to the Assignees, their legal representatives, successors and assigns.

Assignors each hereby represent, covenant and warrant that he or she has the full right to convey the entire right, title and interest by this instrument, free of any encumbrances and that no other agreement has been or will be executed in conflict herewith.

The provisions of this Assignment are binding upon each Assignors' heirs, legal representatives and/or administrators and assigns.

Assignors hereby grant to the law firm of Stimson, Shin & Associates LLP of Washington, DC and their attorneys and agents as associated with Customer No. 68103 the authority and power to insert on this instrument any further identification which may be necessary or desirable for purposes of recordation in the United States Patent and Trademark Office or a Patent Office of any foreign country.

Signature of First Inventor:

Kim, Jun-Woo

KIM, Jun-Woo

23. May. 2007

Date

Signature of Second Inventor:

Chae, Su-Chang

CHAE, Su-Chang

23. May. 2007

Date

Signature of Third Inventor:

Lee, Young-Ha

LEE, Young-Ha

23. May. 2007

Date

Attorney Docket No.:
Client Docket No.:

Signature of Fourth Inventor:

Hong, Eon-Young
HONG, Eon-Young

23 May. 2007
Date

Signature of Fifth Inventor:

Park, Youn-Ok
PARK, Youn-Ok

23 May. 2007
Date