502563180 11/08/2013

PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT2608937

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

CONVEYING PARTY DATA

| Name | Execution Date |
|----------------|----------------|
| CHIWOO LIM | 10/16/2013 |
| KYUNGKYU KIM | 10/16/2013 |
| DAEGYUN KIM | 10/16/2013 |
| HYUNSEOK RYU | 10/16/2013 |
| SEUNGHOON PARK | 10/16/2013 |

RECEIVING PARTY DATA

| Name: | SAMSUNG ELECTRONICS CO., LTD. | |
|-----------------|-------------------------------|--|
| Street Address: | 129, SAMSUNG-RO, YEONGTONG-GU | |
| City: | SUWON-SI, GYEONGGI-DO | |
| State/Country: | KOREA, REPUBLIC OF | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 14075643 |

CORRESPONDENCE DATA

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| ATTORNEY DOCKET NUMBER: | 0203-1179 |
|-------------------------|--------------------|
| NAME OF SUBMITTER: | GEORGE C. ECKERT |
| Signature: | /George C. ECKERT/ |

PATENT 502563180 REEL: 031570 FRAME: 0644

P \$40,00 14075643

| Date: | 11/08/2013 |
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| Total Attachments: 4 source=0203-1179 Assignment As Filed#page1.tif source=0203-1179 Assignment As Filed#page2.tif source=0203-1179 Assignment As Filed#page3.tif source=0203-1179 Assignment As Filed#page4.tif | |

PATENT REEL: 031570 FRAME: 0645 Form **PTO-1595** (Rev. 07/05) OMB No. 0651-0027 (exp. 6/30/2008)

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) 2. Name and address of receiving party(ies) Name: Samsung Electronics Co., Ltd. 1) Chiwoo LIM, 2) Kyungkyu KIM, 3) Daegyun KIM, 4) Hyunseok RYU, 5) Seunghoon PARK Internal Address: Additional name(s) of conveying party(ies) attached? Yes 🔽 No 3. Nature of conveyance/Execution Date(s): Street Address: 129, Samsung-ro, Yeongtong-gu Execution Date(s) October 16, 2013 Merger ✓ Assignment City: Suwon-si, Gyeonggi-do Security Agreement Change of Name Government Interest Assignment Country: Republic of Korea Zip: Executive Order 9424, Confirmatory License Other 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) B. Patent No.(s) 14/075,643 Additional numbers attached? Yes V No 5. Name and address to whom correspondence 6. Total number of applications and patents concerning document should be mailed: involved: One Name: Jefferson IP Law, LLP **7. Total fee** (37 CFR 1.21(h) & 3.41) \$ Internal Address: George Eckert Authorized to be charged by credit card Authorized to be charged to deposit account **Enclosed** Street Address: 1130 Connecticut Ave., NW, Suite 420 None required (government interest not affecting title) 8. Payment Information City: Washington a. Credit Card Last 4 Numbers _____ State: DC Zip:20036 Expiration Date _____ Phone Number: 202-293-0804 b. Deposit Account Number Fax Number: 202-403-3587 Authorized User Name ___ Email Address: usdocketing@jeffersonip.com 9. Signature: /George C. ECKERT/ Reg. No. 58,892 November 8, 2013 Signature Date Total number of pages including cover sheet, attachments, and documents: Name of Person Signing

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

DOCKET NO.: 0203-1179

CLIENT REF.: YPF201308-0022/US_DMC SAMSUNG REF.: MJ-201207-008-1-US0

Assignment

WHEREAS, the following inventors, namely 1) Chiwoo LIM, 2) Kyungkyu KIM, 3) Daegyun KIM, 4) Hyunseok RYU, and 5) Seunghoon PARK, all, citizens of the 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:

NON-ORTHOGONAL CONNECTION ID-BASED SCHEDULING METHOD AND APPARATUS FOR USE IN DEVICE-TO-DEVICE COMMUNICATION SYSTEM,

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on <u>November 8, 2013</u>, and assigned Serial No. <u>14/075,643</u>; and,

WHEREAS, Samsung Electronics Co., Ltd., a corporation duly organized under the laws of the Republic of Korea, located and doing business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, 443-742 (hereinafter called "Assignee"), 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 Assignee the entire and exclusive worldwide right, title and interest in and to all 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 Assignee's expense:

- a. to execute:
 - all papers to be used in connection with this application and any divisional, continuing, substitute or reissue application thereof, as the Assignee may deem necessary or expedient, and

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PATENT REEL: 031570 FRAME: 0647 DOCKET NO.: 0203-1179

CLIENT REF.: YPF201308-0022/US_DMC SAMSUNG REF.: MJ-201207-008-1-US0

- 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;
- to cooperate with the Assignee 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;
- to communicate to the Assignee 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 Assignee the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignee 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 Assignee, its legal representatives, successors and assigns.

Assignors each hereby represents, covenants and warrants 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 Assignors' heirs, legal representatives and/or administrators and assigns.

Assignors hereby grant to the law firm of Jefferson IP Law, LLP of Washington, DC and its 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.

DOCKET NO.: 0203-1179

CLIENT REF.: **YPF201308-0022/US_DMC** SAMSUNG REF.: **MJ-201207-008-1-US0**

| Signature of Inventor: | Chiwoo LIM | October 16, 2013 |
|------------------------|-----------------------------|-----------------------|
| | Chiwoo Lim | Date |
| Signature of Inventor: | Kynvijkyn KIM Kyungkyu KIM | October 16,2013 Date |
| | Mydnghyu Mivi | Date |
| Signature of Inventor: | | Octobar16,2013 |
| | Daegyun KIM | Date |
| Signature of Inventor: | M | 0 Ctober 16, 20/3 |
| • | Hyunseok KYU | Date |
| Signature of Inventor: | M | OCTOber 16, 2013 |

Seunghoon PARK

Date