

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5734262

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT
NATURE OF CONVEYANCE:	Corrective Assignment to correct the 2ND INVENTOR MIDDLE NAME WAS SPELLED INCORRECTLY previously recorded on Reel 049928 Frame 0877. Assignor(s) hereby confirms the THE CORRECT SPELLING IS "YUN SUNG KIM".

CONVEYING PARTY DATA

Name	Execution Date
SANGHOON SUNG	07/20/2019
YUN SUNG KIM	09/23/2019
MINHO SONG	07/26/2019
SANDEEP MANGRULKAR	07/26/2019

RECEIVING PARTY DATA

Name:	SPRINT SPECTRUM LP
Street Address:	6391 SPRINT PARKWAY
Internal Address:	MAILSTOP: KSOPHT0101-Z2100
City:	OVERLAND PARK
State/Country:	KANSAS
Postal Code:	66251-2100

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16527462

CORRESPONDENCE DATA**Fax Number:**

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Email: Monica.2.Jenista@sprint.com, docketing@jonesrobb.com

Correspondent Name: SPRINT SPECTRUM LP

Address Line 1: 6391 SPRINT PARKWAY

Address Line 2: MAILSTOP: KSOPHT0101-Z2100

Address Line 4: OVERLAND PARK, KANSAS 66251-2100

ATTORNEY DOCKET NUMBER:	12189US01
NAME OF SUBMITTER:	SACHIN KANDHARI
SIGNATURE:	/Sachin Kandhari/
DATE SIGNED:	09/24/2019

Total Attachments: 8

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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)

Sanghoon SUNG
Yun Sung KIM
Minho SONG
Sandeep MANGRULKAR

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

2. Name and address of receiving party(ies)

Name: Sprint Spectrum LP

Internal Address: _____

Street Address: 6391 Sprint Parkway

MAILSTOP: KSOPHT0101-Z2100

City: Overland Park

State: Kansas

Country: US Zip: 66251-2100

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

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

Execution Date(s) 7.20.19; 7.26.19; 7.26.19; 7.26.19

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

4. Application or patent number(s):

This document serves as an Oath/Declaration (37 CFR 1.63).

A. Patent Application No.(s)

16/527,462

B. Patent No.(s)

Additional numbers attached? Yes No

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

Name: SPRINT SPECTRUM LP

Internal Address: _____

Street Address: 6391 Sprint Parkway
MAILSTOP: KSOPHT0101-Z2100

City: Overland Park

State: Kansas Zip: 66251-2100

Phone Number: _____

Docket Number: 12189US01

Email Address: Monica.2.Jenista@sprint.com
docketing@jonesrobb.com

6. Total number of applications and patents involved: _____

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

- Authorized to be charged to deposit account
- Enclosed
- None required (government interest not affecting title)

8. Payment Information

Deposit Account Number _____

Authorized UserName _____

9. Signature: /Sachin T. KANDHARI/

September 24, 2019

Signature

Date

Sachin T. KANDHARI

Name of Person Signing

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

8

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0148, or mailed to:
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

**ASSIGNMENT AND AGREEMENT IN AN APPLICATION FOR
LETTERS PATENT OF THE UNITED STATES OF AMERICA**

I hereby declare that I am the sole inventor (if only one inventor is named below) or an original, first and joint inventor (if plural inventors are named below) of the invention relating to "BEAMFORMING IN MASSIVE MIMO NETWORKS" described in an application for Letters Patent of the United States of America filed on _____, Serial No. _____, or, if not identified here by filing date and serial number, executed by me on even date with my execution of this Assignment.

For valuable consideration received, I hereby sell, assign and transfer to Sprint Spectrum L.P., a limited partnership duly organized and existing under the laws of the State of Delaware, United States of America, its successors and assigns, my entire right, title and interest, for all countries in and to said inventions and all the rights and privileges under any and all Letters Patent that may be granted therefore, and any divisions, continuations, reissues and extensions thereof.

I agree that, when requested, I will, without charge to said limited partnership but at its expense, sign all papers, take all rightful oaths, make all rightful declarations and do all acts which may be necessary, desirable or convenient for securing and maintaining patents or other forms of protection for said inventions in any and all countries and for vesting title thereto in said limited partnership, its successors, assigns or nominees.

I agree that I will communicate to said limited partnership or its representatives any facts known to me respecting said inventions and when requested by said limited partnership and at its expense will testify in any legal proceedings, and generally do everything possible to aid said limited partnership, its successors, assigns and legal representatives or nominees, to obtain or enforce proper protection for said inventions in any and all countries.

I authorize and empower said limited partnership, its successors, assigns or nominees, to make application for patent or other form of protection for said inventions in its or their own name, or in my/our name, in any and all countries to invoke and claim for any application for patent or other form of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from me.

I hereby consent that a copy of this Assignment shall be deemed a full legal and formal equivalent of any assignment, consent to file or like document which may be required in any country for any purpose and more particularly in proof of the right of the said limited partnership or its successors, assigns or nominees to apply for patent or other proper protection for said inventions, and to claim the aforesaid benefits of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it.

I covenant with Sprint Spectrum L.P., its successors, assigns, legal representatives, and nominees, that to the best of my knowledge the right, title and interest herein conveyed by me are free and clear of any encumbrance, and that I have the full right to convey the same as herein expressed.

This Agreement and Assignment supersedes all other assignments, agreements and addendums related to the above identified application.

The undersigned hereby authorizes and requests the attorneys of record in said application to insert in this assignment the filing date and serial number of said application when officially known, and the date of execution of the application.

SOLE OR JOINT INVENTOR

Inventor (1) Sanghoon SUNG

Sanghoon
(Signature in Full)

Date: 07-20-2019

Post Office Address: 42976 Deer Chase Place
Ashburn, VA 20147

Residence: Ashburn, VA, USA

SOLE OR JOINT INVENTOR

Inventor (2) ~~Yun Sun KIM~~
Yun Sung KIM

Yun Sung KIM
(Signature in Full)

Date: 9/23/2019

Yun Sung KIM
(Signature in Full)

Date: 7/26/2019

Post Office Address: 19872 Bethpage Ct.
Ashburn, VA 20147

Residence: Ashburn, VA USA

SOLE OR JOINT INVENTOR

Inventor (3) Minho SONG

Minho Song
(Signature in Full)

Date: 7/26/2019

Post Office Address: 20185 Bandon Dunes Ct.
Ashburn, VA 20147

Residence: Ashburn, VA, USA

SOLE OR JOINT INVENTOR

Inventor (4) Sandeep MANGRULKAR

Sandeep Mangrulkar

(Signature in Full)

Date: 7/26/2019

Post Office Address: 25013 White Sands Dr.
Chantilly, VA 20152

Residence: Chantilly, VA, USA

PATENT ASSIGNMENT COVER SHEET

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 Stylesheet Version v1.2

EPAS ID: PAT5647575

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
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Email:	Monica.2.Jenista@sprint.com, docketing@jonesrobb.com
Correspondent Name:	SPRINT SPECTRUM LP
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Address Line 4:	OVERLAND PARK, KANSAS 66251-2100
ATTORNEY DOCKET NUMBER:	12189US01
NAME OF SUBMITTER:	SACHIN KANDHARI
SIGNATURE:	/Sachin Kandhari/
DATE SIGNED:	07/31/2019
Total Attachments: 2	
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For valuable consideration received, I hereby sell, assign and transfer to Sprint Spectrum L.P., a limited partnership duly organized and existing under the laws of the State of Delaware, United States of America, its successors and assigns, my entire right, title and interest, for all countries in and to said inventions and all the rights and privileges under any and all Letters Patent that may be granted therefore, and any divisions, continuations, reissues and extensions thereof.

I agree that, when requested, I will, without charge to said limited partnership but at its expense, sign all papers, take all rightful oaths, make all rightful declarations and do all acts which may be necessary, desirable or convenient for securing and maintaining patents or other forms of protection for said inventions in any and all countries and for vesting title thereto in said limited partnership, its successors, assigns or nominees.

I agree that I will communicate to said limited partnership or its representatives any facts known to me respecting said inventions and when requested by said limited partnership and at its expense will testify in any legal proceedings, and generally do everything possible to aid said limited partnership, its successors, assigns and legal representatives or nominees, to obtain or enforce proper protection for said inventions in any and all countries.

I authorize and empower said limited partnership, its successors, assigns or nominees, to make application for patent or other form of protection for said inventions in its or their own name, or in my/our name, in any and all countries to invoke and claim for any application for patent or other form of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from me.

I hereby consent that a copy of this Assignment shall be deemed a full legal and formal equivalent of any assignment, consent to file or like document which may be required in any country for any purpose and more particularly in proof of the right of the said limited partnership or its successors, assigns or nominees to apply for patent or other proper protection for said inventions, and to claim the aforesaid benefits of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it.

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Minho Song
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Sandeep Mangrulkar
(Signature in Full)

Date: 7/26/2019

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