

|                                      |
|--------------------------------------|
| <b>PATENT ASSIGNMENT COVER SHEET</b> |
|--------------------------------------|

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5431172

|   |  |
|---|--|
| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                                       |
| <b>NATURE OF CONVEYANCE:</b>  | ASSIGNMENT   |
| <b>CONVEYING PARTY DATA</b>   |  |
| <b>Name</b>   | <b>Execution Date</b>                                |
| SREEKAR MARUPADUGA  | 03/19/2019   |
| RAJVEEN NARENDRAN   | 03/19/2019   |
| <b>RECEIVING PARTY DATA</b>   |  |
| <b>Name:</b>  | SPRINT SPECTRUM LP                                   |
| <b>Street Address:</b>  | 6391 SPRINT PARKWAY                                  |
| <b>Internal Address:</b>  | MAILSTOP: KSOPHT0101-Z2100                           |
| <b>City:</b>  | OVERLAND PARK  |
| <b>State/Country:</b>   | KANSAS   |
| <b>Postal Code:</b>   | 66251-2100   |
| <b>PROPERTY NUMBERS Total: 1</b>  |  |
| <b>Property Type</b>  | <b>Number</b>  |
| <b>Application Number:</b>  | 16359041   |
| <b>CORRESPONDENCE DATA</b>  |  |
| <b>Fax Number:</b>  |  |
| <i>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.</i> |  |
| <b>Email:</b>   | Monica.2.Jenista@sprint.com, docketing@jonesrobb.com |
| <b>Correspondent Name:</b>  | SPRINT SPECTRUM LP                                   |
| <b>Address Line 1:</b>  | 6391 SPRINT PARKWAY                                  |
| <b>Address Line 2:</b>  | MAILSTOP: KSOPHT0101-Z2100                           |
| <b>Address Line 4:</b>  | OVERLAND PARK, KANSAS 66251-2100                     |
| <b>ATTORNEY DOCKET NUMBER:</b>  | 12036  |
| <b>NAME OF SUBMITTER:</b>   | SACHIN KANDHARI                                      |
| <b>SIGNATURE:</b>   | /Sachin Kandhari/                                    |
| <b>DATE SIGNED:</b>   | 03/20/2019   |
| <b>Total Attachments: 2</b>   |  |
| source=31H5860#page1.tif  |  |
| source=31H5860#page2.tif  |  |

**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 "**PERFORMING MU-MIMO IN WIRELESS COMMUNICATION 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) Sreekar MARUPADUGA



(Signature in Full)


Date: 03/19/2019

Post Office Address: 5700 W. 137<sup>th</sup> St., Apt. 408  
Overland Park, KS 66223

Residence: Overland Park, Kansas, US

SOLE OR JOINT INVENTOR

Inventor (2) Rajveen NARENDRAN



(Signature in Full)

Date: 3/19/19

Post Office Address: 24350 W. 108<sup>th</sup> Terr.  
Olathe, KS 66061

Residence: Olathe, Kansas, US