

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5561419

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| SATHYANARAYANAN RAGHUNATHAN | 06/03/2019 |
| MUTHUKUMARASWAMY SEKAR | 06/03/2019 |
| MAHESWARAN VIJAYAKUMAR | 06/03/2019 |
| SURESH MAJJARA | 06/03/2019 |
| RECEIVING PARTY DATA | |
| Name: | SPRINT COMMUNICATIONS COMPANY L.P. |
| Street Address: | 6391 SPRINT PARKWAY |
| City: | OVERLAND PARK |
| State/Country: | KANSAS |
| Postal Code: | 66251 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 16434489 |
| CORRESPONDENCE DATA | |
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| ATTORNEY DOCKET NUMBER: | 12190/21211.319452 |
| NAME OF SUBMITTER: | ELENA K. MCFARLAND |
| SIGNATURE: | /Elena K. McFarland/ |
| DATE SIGNED: | 06/07/2019 |
| Total Attachments: 3 | |
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| source=319452_Assignment#page2.tif | |

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

INVENTOR(S): Sathyanarayanan Raghunathan; Muthukumaraswamy Sekar; Maheswaran
Vijayakumar; and Suresh Majjara

I hereby declare that I am an original, first and joint inventor of the invention
relating to

IMPROVING USER EQUIPMENT BEAM EFFECTIVENESS

described in an application for Letters Patent of the United States of America, executed by me on
even date with my execution of this Assignment.

For valuable consideration received, I hereby sell, assign and transfer to SPRINT
COMMUNICATIONS COMPANY 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.

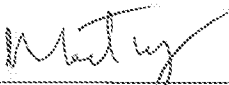
I hereby consent that a copy of this Assignment shall be deemed a full legal and formal
equivalent of any assignment, consent to file or like document which may be required in any
country for any purpose and more particularly in proof of the right of the said limited partnership
or its successors, assigns 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.

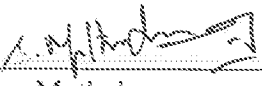
I covenant with SPRINT COMMUNICATIONS COMPANY L.P., its successors, assigns, legal representatives, and nominees, that to the best of my knowledge the right, title and interest herein conveyed by me are free and clear of any encumbrance, and that I have the full right to convey the same as herein expressed.

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

Please direct any questions regarding this Assignment to:

Attn: Customer No. 32423
Steven J. Funk
(913) 315-9274

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| Inventor's Signature: |  | 06/03/2019 |
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| Inventor's Signature: |  | 06/03/2019 |
| | Muthukumaraswamy Sekar | Date |
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| | | |
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| | | |
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| Inventor's Signature: | <i>S. Suresh</i> | <i>06/03/2019</i> |
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