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PATENT ASSIGNMENT COVER SHEET

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

CONVEYING PARTY DATA

| Name | Execution Date |
|-----------------------|----------------|
| JONATHAN LING | 09/01/2016 |
| VASUDEVAN SUBRAMANIAN | 08/23/2016 |
| BONGHO KIM | 08/30/2016 |

RECEIVING PARTY DATA

| Name: | ALCATEL-LUCENT USA INC. | |
|-------------------|-------------------------|--|
| Street Address: | 600-700 Mountain Avenue | |
| Internal Address: | | |
| City: | Murray Hill | |
| State/Country: | New Jersey | |
| Postal Code: | 78759 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15254797 |

CORRESPONDENCE DATA

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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.

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| ATTORNEY DOCKET NUMBER: | 4100-818613-US |
|-------------------------|-------------------|
| NAME OF SUBMITTER: | MARK W. SINCELL |
| SIGNATURE: | /Mark W. Sincell/ |
| DATE SIGNED: | 09/02/2016 |

Total Attachments: 4

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ASSIGNMENT AND AGREEMENT

For value received, I. Jonathan Ling, of North Brunswick, New Jersey. Bongho Kim, of Morganville, New Jersey, and Vasudevan Subramanian, of Morristown, New Jersey, hereby sell, assign and transfer to Alcatel-Lucent USA Inc., a corporation of Delaware, having an office at 600-700 Mountain Avenue, Murray Hill, New Jersey, 07974-0636. United States of America, and its successors, assigns and legal representatives, the entire right, title and interest, for the United States of America, in and to certain inventions related to ESTIMATING BANDWIDTH IN A HETEROGENEOUS WIRELESS COMMUNICATION system described in an application for Letters Patent of the United States, executed by me of even date herewith, and all the rights and privileges in said application and under any and all Letters Patent that may be granted in the United States for said inventions; and I also concurrently hereby sell, assign and transfer to Alcatel-Lucent USA Inc. the entire right, title and interest in and to said inventions for all countries foreign to the United States, including all rights of priority arising from the application aforesaid, and all the rights and privileges under any and all forms of protection, including Letters Patent, that may be granted in said countries foreign to the United States for said inventions.

I authorize Alcatel-Lucent USA Inc. to make application for such protection in its own name and maintain such protection in any and all countries foreign to the United States, and to invoke and claim for any application for patent or other form of protection for said inventions, without further authorization from me, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

I hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of Alcatel-Lucent USA Inc. to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

I request that any and all patents for said inventions be issued to Alcatel-Lucent USA Inc. in the United States and in all countries foreign to the United States, or to such nominees as Alcatel-Lucent USA Inc. may designate.

I agree that, when requested, I shall, without charge to Alcatel-Lucent USA Inc. but at its expense, sign all papers, and do all acts which may be necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.

Jonathan LING

Date: 9//1/2014

United States of America)

State of New Yersey) ss.:

County of Middlesex)

Notary Public

DIANNE K STATHUM

NOTARY PUBLIC

STATE OF NEW JERSEY

ID # 50024824

MY COMMISSION EXPIRES OCT. 16, 2020

4

I agree that, when requested, I shall, without charge to Alcatel-Lucent USA Inc. but at its expense, sign all papers, and do all acts which may be necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.

Vasudevan SUBRAMANIAN

Date: <u>Augus 1 23</u> 2016

United States of America)

State of MJ

388.:

County of Union

On this 23 ACL day of 2016 before personally came, Vasudevan SUBRAMANIAN to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same:

Notary Public

KANTA KUMAS GURNANI Ommission # 2387365 Public State of New Jersey

I agree that, when requested, I shall, without charge to Alcatel-Lucent USA Inc. but at its expense, sign all papers, and do all acts which may be necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.

Bongho KIM

Date: 08/30/20/6

United States of America)

State of

NJ

) 88.0

County of Monass 1/4)

On this 30 day of 4000 me personally came, Bongho KIM to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.

Notary Public

DIANNE K STATHUM

NOTARY PUBLIC

STATE OF NEW JERSEY

ID # 50024824

MY COMMISSION EXPIRES OCT. 16, 2020



PATENT REEL: 039909 FRAME: 0763

RECORDED: 09/02/2016