# 505279929 01/15/2019

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

 SUBMISSION TYPE:
 NEW ASSIGNMENT

 NATURE OF CONVEYANCE:
 ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
SAIRAMESH NAMMI	08/17/2018
ADITYA CHOPRA	09/21/2018
ARUNABHA GHOSH	10/31/2018
MILAP MAJMUNDAR	08/15/2018

## **RECEIVING PARTY DATA**

Name:	AT&T INTELLECTUAL PROPERTY I, L.P.
Street Address:	675 W. PEACHTREE STREET
Internal Address:	SUITE 4000
City:	ATLANTA
State/Country:	GEORGIA
Postal Code:	30308

## **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	16058667

## **CORRESPONDENCE DATA**

**Fax Number:** (216)696-8731

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.

**Phone:** 404-927-2780

**Email:** epas@thepatentattorneys.com

Correspondent Name: AT&T LEGAL DEPARTMENT - T&W ATTN: PATEN

Address Line 1: ROOM 2A-207
Address Line 2: ONE AT&T WAY

Address Line 4: BEDMINSTER, NEW JERSEY 07921

Tatal Alla alamanata o	
DATE SIGNED:	01/15/2019
SIGNATURE:	/Thomas E. Watson/
NAME OF SUBMITTER:	THOMAS E. WATSON
ATTORNEY DOCKET NUMBER:	ATTWP1073US

Total Attachments: 8

PATENT REEL: 048016 FRAME: 0380

EPAS ID: PAT5326701

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WHEREAS I, SaiRamesh Nammi residing at 9916 Bundoran Dr., Austin, TX 78717, hereafter referred to as Assignor, am listed as an inventor on a patent application entitled "DETERMINING PRECODING COEFFICIENTS FOR FRONTHAUL LINKS IN A CLOUD RADIO ACCESS NETWORK," having AT&T Docket No. 2018-0636, the patent application to be filed in the United States Patent & Trademark Office or which was filed as U.S. Patent Application Serial No. 16/605,8667 on August 8, 2018; and

WHEREAS, AT&T INTELLECTUAL PROPERTY 1, L.P., a Partnership organized and existing under the laws of Georgia and having an address at 675 W. Peachtree Street, Suite 4000, Atlanta, GA 30308 (hereinafter referred to as Assignee), desires to acquire the entire right, title and interest for the United States of America and elsewhere throughout the world in and to said invention and the patent application identified above, including any and all divisions and continuations thereof and any and all Letters Patent which may be granted thereon, including any and all renewals, reissues and prolongations thereto;

NOW THEREFORE, be it known that for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration the receipt of which from Assignee is hereby acknowledged, I, as Assignor, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, my entire right, title, and interest in and to this invention and this non-provisional application, and all divisions, substitutions, and continuations thereof; and all Letters Patent of the United States which may be granted thereon, and all reexaminations and reissues thereof; and all rights to claim priority on the basis of the above provisional application (if any), as well as all rights to claim priority on the basis of this application; and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, including certificates of inventions, utility models, industrial design protection, design patent protection, and other governmental grants or issuances; and all extensions, renewals, prolongations, and reissues thereof; to have and to hold for the sole and exclusive use and benefit of the Assignee, its successors and assigns, to the full end of the term and terms for all such patents;

AND, I HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent for this invention to Assignee, its successors and assigns, in accordance with the terms of this Assignment;

AND, I HEREBY covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any assignment, sale, license, agreement, or encumbrance in conflict with this Assignment;

AND, I HEREBY further covenant and agree, for the Assignor and the Assignor's legal representatives, that I will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to us respecting this invention; assist the Assignee in the prosecution of the patent application identified above; assist in the making and prosecution of any other patent applications that the Assignee may elect to make covering the invention identified above; testify in any interference, litigation, or other legal proceeding; sign all lawful papers when called upon to do so; execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee, its successors or assigns; execute all divisional, continuation, and reissue applications; make all rightful oaths and generally do everything possible to aid Assignee, to obtain and enforce proper patent protection

for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee; and hereby instruct, and further covenant and agree to bind our heirs, legal representatives, and assigns, to do same, without compensation, but at the expense of Assignee or its representatives.

AND, 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 AT&T INTELLECTUAL PROPERTY I, L.P. to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

This Assignment may be executed in any number of counterparts, each of which when so executed and delivered shall be deemed an original, and such counterparts together shall constitute one and the same instrument. A facsimile copy of this Assignment, or any form of an electronic copy of this Assignment, including the signature pages hereto, shall be deemed to be an original.

I hereby authorize and request Amin, Turocy & Watson, LLP to insert the filing date and application number of said application when known.

IN TESTIM 20 🖔	ONY WHEREOF, I have hereunto set my hand this day of August
	SaiRamesh Nammi
State of Texas	· · · · · · · · · · · · · · · · · · ·
County of Trav	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
herein set forth.	, 20 8, before me a Notary Public in and for the above County appeared
Notary Public	My Commission Expires: 8-10-20
	Page 2 of 2  Page 2 of 2  Page 2 of 2  Page 2 of 2

WHEREAS I, Aditya Chopra residing at 4308 Avenue D, Austin, TX 78751, hereafter referred to as Assignor, am listed as an inventor on a patent application entitled "DETERMINING PRECODING COEFFICIENTS FOR FRONTHAUL LINKS IN A CLOUD RADIO ACCESS NETWORK," having AT&T Docket No. 2018-0636, the patent application to be filed in the United States Patent & Trademark Office or which was filed as U.S. Patent Application Serial No. -16/605,8667 on August 8, 2018; and

WHEREAS, AT&T INTELLECTUAL PROPERTY I, L.P., a Partnership organized and existing under the laws of Georgia and having an address at 675 W. Peachtree Street, Suite 4000, Atlanta, GA 30308 (hereinafter referred to as Assignee), desires to acquire the entire right, title and interest for the United States of America and elsewhere throughout the world in and to said invention and the patent application identified above, including any and all divisions and continuations thereof and any and all Letters Patent which may be granted thereon, including any and all renewals, reissues and prolongations thereto;

NOW THEREFORE, be it known that for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration the receipt of which from Assignee is hereby acknowledged, I, as Assignor, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, my entire right, title, and interest in and to this invention and this non-provisional application, and all divisions, substitutions, and continuations thereof; and all Letters Patent of the United States which may be granted thereon, and all reexaminations and reissues thereof; and all rights to claim priority on the basis of the above provisional application (if any), as well as all rights to claim priority on the basis of this application; and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, including certificates of inventions, utility models, industrial design protection, design patent protection, and other governmental grants or issuances; and all extensions, renewals, prolongations, and reissues thereof; to have and to hold for the sole and exclusive use and benefit of the Assignee, its successors and assigns, to the full end of the term and terms for all such patents;

AND, I HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent for this invention to Assignee, its successors and assigns, in accordance with the terms of this Assignment;

AND, I HEREBY covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any assignment, sale, license, agreement, or encumbrance in conflict with this Assignment;

AND, I HEREBY further covenant and agree, for the Assignor and the Assignor's legal representatives, that I will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to us respecting this invention; assist the Assignee in the prosecution of the patent application identified above; assist in the making and prosecution of any other patent applications that the Assignee may elect to make covering the invention identified above; testify in any interference, litigation, or other legal proceeding; sign all lawful papers when called upon to do so; execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee, its successors or assigns; execute all divisional, continuation, and reissue applications; make all rightful oaths and generally do everything possible to aid Assignee, to obtain and enforce proper patent protection

for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be bome by the Assignee; and hereby instruct, and further covenant and agree to bind our heirs, legal representatives, and assigns, to do same, without compensation, but at the expense of Assignee or its representatives.

AND, 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 AT&T INTELLECTUAL PROPERTY I, L.P. to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

This Assignment may be executed in any number of counterparts, each of which when so executed and delivered shall be deemed an original, and such counterparts together shall constitute one and the same instrument. A facsimile copy of this Assignment, or any form of an electronic copy of this Assignment, including the signature pages hereto, shall be deemed to be an original.

I hereby authorize and request Amin, Turocy & Watson, LLP to insert the filing date and application number of said application when known.

IN TEST 20 18.	IMONY WHEREOF, I have hereunto set my hand this 215 day of Splembe.  Aditya Chopra
State of	<u> </u>
County of	RAVIS
On this 21 day of and State, person acknowledged the herein set forth.	of Septem 1997, before me a Notary Public in and for the above Countries ally appeared, and execution of the foregoing assignment as his/her free act and deed for the purpose
Notary Public	My Commission Expires: 8-10-20
	Page 2 of 2  Page 2 of 2  AMY R NORMAN  Notary Public, State of Texas  Comm. Expires 08-10-2020

Notary ID 12023641

WHEREAS I, Arunabha Ghosh residing at 9805 Bundoran Dr., Austin, TX 78717, hereafter referred to as Assignor, am listed as an inventor on a patent application entitled "DETERMINING PRECODING COEFFICIENTS FOR FRONTHAUL LINKS IN A CLOUD RADIO ACCESS NETWORK," having AT&T Docket No. 2018-0636, the patent application to be filed in the United States Patent & Trademark Office or which was filed as U.S. Patent Application Serial No. - 16/605,8667 on August 8, 2018; and

WHEREAS, AT&T INTELLECTUAL PROPERTY I, L.P., a Partnership organized and existing under the laws of Georgia and having an address at 675 W. Peachtree Street, Suite 4000, Atlanta, GA 30308 (hereinafter referred to as Assignee), desires to acquire the entire right, title and interest for the United States of America and elsewhere throughout the world in and to said invention and the patent application identified above, including any and all divisions and continuations thereof and any and all Letters Patent which may be granted thereon, including any and all renewals, reissues and prolongations thereto;

NOW THEREFORE, be it known that for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration the receipt of which from Assignee is hereby acknowledged, I, as Assignor, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, my entire right, title, and interest in and to this invention and this non-provisional application, and all divisions, substitutions, and continuations thereof; and all Letters Patent of the United States which may be granted thereon, and all reexaminations and reissues thereof; and all rights to claim priority on the basis of the above provisional application (if any), as well as all rights to claim priority on the basis of this application; and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, including certificates of inventions, utility models, industrial design protection, design patent protection, and other governmental grants or issuances; and all extensions, renewals, prolongations, and reissues thereof; to have and to hold for the sole and exclusive use and benefit of the Assignee, its successors and assigns, to the full end of the term and terms for all such patents;

AND, I HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent for this invention to Assignee, its successors and assigns, in accordance with the terms of this Assignment;

AND, THEREBY covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any assignment, sale, license, agreement, or encumbrance in conflict with this Assignment;

AND, I HEREBY further covenant and agree, for the Assignor and the Assignor's legal representatives, that I will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to us respecting this invention; assist the Assignee in the prosecution of the patent application identified above; assist in the making and prosecution of any other patent applications that the Assignee may elect to make covering the invention identified above; testify in any interference, litigation, or other legal proceeding; sign all lawful papers when called upon to do so; execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee, its successors or assigns; execute all divisional, continuation, and reissue applications; make all rightful oaths and generally do everything possible to aid Assignee, to obtain and enforce proper patent protection

for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee; and hereby instruct, and further covenant and agree to bind our heirs, legal representatives, and assigns, to do same, without compensation, but at the expense of Assignee or its representatives.

AND, 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 AT&T INTELLECTUAL PROPERTY I, L.P. to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

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Thereby authorize and request Amin, Turocy & Watson, LLP to insert the filing date and application number of said application when known.

IN TESTIMONY WHEREOF, I have hereunto set by hand this day of  20  Afunabha Ghosh
State of
County of ITAVIS
On this 3 day of 1000 2000, before me a Notary Public in and for the above County and State, personally appeared 1000000000000000000000000000000000000
acknowledged the execution of the foregoing assignment as his/her free act and deed for the purpose
herein set forth.
Unx R Arman
Notary Public Q 17
Notary Public  My Commission Expires: \( \sum_{-0.20} \)

Page 2 of 2

AMY R NORMAN

Notary Public, State of Texas

Comm. Expires 08-10-2020

Notary ID 12023641

WHEREAS I, Milap Majmundar residing at 9620 Cinnabar Trail, Austin, TX 78726, hereafter referred to as Assignor, am listed as an inventor on a patent application entitled "DETERMINING PRECODING COEFFICIENTS FOR FRONTHAUL LINKS IN A CLOUD RADIO ACCESS NETWORK," having AT&T Docket No. 2018-0636, the patent application to be filed in the United States Patent & Trademark Office or which was filed as U.S. Patent Application Serial No. 16/605,8667 on August 8, 2018; and

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AND, I HEREBY further covenant and agree, for the Assignor and the Assignor's legal representatives, that I will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to us respecting this invention; assist the Assignee in the prosecution of the patent application identified above; assist in the making and prosecution of any other patent applications that the Assignee may elect to make covering the invention identified above; testify in any interference, litigation, or other legal proceeding; sign all lawful papers when called upon to do so; execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee, its successors or assigns; execute all divisional, continuation, and reissue applications; make all rightful oaths and generally do everything possible to aid Assignee, to obtain and enforce proper patent protection

for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee; and hereby instruct, and further covenant and agree to bind our heirs, legal representatives, and assigns, to do same, without compensation, but at the expense of Assignee or its representatives.

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I hereby authorize and request Amin, Turocy & Watson, LLP to insert the filing date and application number of said application when known.

IN TESTIMONY WHEREOF, I have hereunto set my hand this 15th day of August,

Milap Majmundar

State of Will (AMSON)

On this 15 day of AUC, 2018, before me a Notary Public in and for the above County and State, personally appeared MILAP MAJMUNDAK, and acknowledged the execution of the foregoing assignment as his/her free act and deed for the purpose herein sentorth.

Notary Public

My Commission Expires: 6-22-27

Page 2 of 2



PATENT REEL: 048016 FRAME: 0389

**RECORDED: 01/15/2019**