505376877 03/15/2019

PATENT ASSIGNMENT COVER SHEET

EPAS ID: PAT5423670

Electronic Version v1.1
Stylesheet Version v1.2

SUBMISSION TYPE:NEW ASSIGNMENTNATURE OF CONVEYANCE:ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
RALF BENDLIN	05/04/2017
XIAOYI WANG	06/09/2017
SAIRAMESH NAMMI	06/08/2017

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:	16354496

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 - AT&W ATTN: PATE

Address Line 1: ROOM 2A 212
Address Line 2: ONE AT&T WAY

Address Line 4: BEDMINSTER, NEW JERSEY 07921

ATTORNEY DOCKET NUMBER:	2017-0528 CON/ATTWP908USA
NAME OF SUBMITTER:	THOMAS E. WATSON
SIGNATURE:	/Thomas E. Watson/
DATE SIGNED:	03/15/2019

Total Attachments: 6

source=2017-0528 Assignment filed 6-12-17 Ser. No. 15-587,155#page1.tif source=2017-0528 Assignment filed 6-12-17 Ser. No. 15-587,155#page2.tif

PATENT 505376877 REEL: 048608 FRAME: 0111

source=2017-0528 Assignment filed 6-12-17 Ser. No. 15-587,155#page3.tif source=2017-0528 Assignment filed 6-12-17 Ser. No. 15-587,155#page4.tif source=2017-0528 Assignment filed 6-12-17 Ser. No. 15-587,155#page5.tif source=2017-0528 Assignment filed 6-12-17 Ser. No. 15-587,155#page6.tif

PATENT REEL: 048608 FRAME: 0112

ASSIGNMENT

WHEREAS I, Ralf Bendlin residing at 301 Arrowhead Trail, Cedar Park, TX 78613, hereafter referred to as Assignor, am listed as an inventor on a patent application entitled "MULTI-STAGE SEGMENTED DOWNLINK CONTROL INFORMATION WITH REDUCED OVERHEAD," having AT&T Docket No. 2017-0528, the patent application to be filed in the United States Patent & Trademark Office; 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

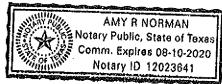
PATENT REEL: 048608 FRAME: 0113 incident to the execution of such papers shall be borne by the Assignee; and hereby instruct, and further covenant and agree to bind our heirs, legal representatives, and assigns, to do same, without compensation, but at the expense of Assignee or its representatives.

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.

2017. IN TESTIMONY WHEREOF, I have hereunto set my hand this 4th day of May
State of Texa 5
County of Travis
On this 4 day of May, 2017, before me a Notary Public in and for the above County and State, personally appeared Rolf Bendin, and acknowledged the execution of the foregoing assignment as his/her free act and deed for the purpose herein set forth.
Amy R. Morman Notany Public My Commission Expires: 8-10-20

Page 2 of 2



ASSIGNMENT

WHEREAS I, Xiaoyi Wang residing at 11300 Pachea Trail, Austin, TX 78726, hereafter referred to as Assignor, am listed as an inventor on a patent application entitled "MULTI-STAGE SEGMENTED DOWNLINK CONTROL INFORMATION WITH REDUCED OVERHEAD," having AT&T Docket No. 2017-0528, the patent application to be filed in the United States Patent & Trademark Office; 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, elesign 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

PATENT REEL: 048608 FRAME: 0115

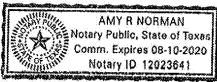
incident to the execution of such papers shall be borne by the Assignee; and hereby instruct, and further covenant and agree to bind our heirs, legal representatives, and assigns, to do same, without compensation, but at the expense of Assignee or its representatives.

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.

Qui, Tour
IN TESTIMONY WHEREOF, I have hereunto set my hand this Way of June,
2011.
Xiaoyi Wang
· · · · · ·
State of Texas
County of Iravis
On this I day of June 20 17, before me a Notary Public in and for the above County
On this That a you was a Notary Public in and for the above County and State, personally appeared Xia vi Wang, and acknowledged the execution of the foregoing assignment as his/her free act and deed for the purpose
acknowledged the execution of the foregoing assignment as his/her free act and deed for the purpose
herein set forth.
any R. Norman Notary Public
Notary Public 2 10 20
My Commission Expires: 8-10-20

Page 2 of 2



ASSIGNMENT

WHEREAS I, SaiRamesh Nammi, residing at 9916 Bundoran Dr, Austin, Texas, 78717, hereafter referred to as Assignor, am listed as an inventor on a patent application entitled "MULTI-STAGE SEGMENTED DOWNLINK CONTROL INFORMATION WITH REDUCED OVERHEAD," having AT&T Docket No. 2017-0528, the patent application to be filed in the United States Patent & Trademark Office; 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

PATENT REEL: 048608 FRAME: 0117 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.

IN TESTIMONY WHEREOF, I have hereunto set my hand this <u>08</u> day of <u>JVNE</u> ,
017 W. Sailann
SAIRAMESH NAMMI
tate of Texas)
County of Trayis
on this <u>8</u> day of <u>June</u> , 20 <u>17</u> before me a Notary Public in and for the above County and State, personally appeared <u>Sai Ramesh Nammi</u> , and
cknowledged the execution of the foregoing assignment as his/her free act and deed for the purpose
erein set forth.
Any R Maman Totary Public My Commission Expires 8-10-20
My Commission Expires: 8-10-20
AMY R NORMAN Notery Public, State of Texas Comm. Expires 08-10-2020 Notary ID 12023641

•

PATENT REEL: 048608 FRAME: 0118

RECORDED: 03/15/2019