504265560 03/09/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4312240

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

CONVEYING PARTY DATA

| Name | Execution Date |
|-------------------|----------------|
| RONG LU | 03/08/2017 |
| RICHARD SILVESTRI | 03/08/2017 |

RECEIVING PARTY DATA

| Name: | AT&T MOBILITY II LLC |
|-----------------|----------------------|
| Street Address: | 1025 LENOX PARK BLVD |
| City: | ATLANTA |
| State/Country: | GEORGIA |
| Postal Code: | 30319 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15454660 |

CORRESPONDENCE DATA

Fax Number: (847)510-0710

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.

Email: docketing@ggip.com

AT&T LEGAL DEPARTMENT - GMG ATTN: PATENT **Correspondent Name:**

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

Address Line 4: BEDMINSTER, NEW JERSEY 07921

| ATTORNEY DOCKET NUMBER: | 7785-1584 | |
|-------------------------|-------------------|--|
| NAME OF SUBMITTER: | JAY H. ANDERSON | |
| SIGNATURE: | /Jay H. Anderson/ | |
| DATE SIGNED: | 03/09/2017 | |

Total Attachments: 6

source=7785-1584 SIGNED ASSIGNMENT#page1.tif source=7785-1584 SIGNED ASSIGNMENT#page2.tif source=7785-1584 SIGNED ASSIGNMENT#page3.tif

source=7785-1584 SIGNED ASSIGNMENT#page4.tif

source=7785-1584 SIGNED ASSIGNMENT#page5.tif

PATENT REEL: 041532 FRAME: 0190

504265560

source=7785-1584 SIGNED ASSIGNMENT#page6.tif

PATENT REEL: 041532 FRAME: 0191

ASSIGNMENT

WHEREAS We, RONG LU, residing at 826 NE 103rd St., Seattle, WA 98125, and RICHARD SILVESTRI, residing at 6065 Blackwater Trl Nw, Atlanta, GA 30328, hereinafter referred to as Assignor, am listed as an inventor on a patent application entitled PRE-CACHING VIDEO CONTENT TO DEVICES USING LTE BROADCAST; having AT&T Docket No. 2016-0176, US Patent Application Serial no. _______, for a full description of which reference is here made to an application for Letters Patent of the United States; and

WHEREAS, AT&T Mobility II LLC, organized and existing under the laws of Delaware and having an address at 1025 Lenox Park Blvd, Atlanta, GA 30319, (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; Assignor also authorizes the Assignee, any agent of the Assignee, and any attorney of the Assignee to fill in the U.S. Application Serial No. above, and any further identification information, if required;

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 Mobility II LLC 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 yth day of March, 2017.

RONGLU

State of Washington)

att

County of USA)

On this State day of Maccel , 2017, before me a Notary Public in and

for the above County and State, personally appeared

Rever Lu, and acknowledged the execution of the foregoing

assignment as his/her free act and deed for the purpose herein set forth.

Notary Public

My Commission Expires: 3-(1-201)?

GREGORY J DEWIG

Notary Public State of Washington

Commission Expires 03/11/2019

ASSIGNMENT

5708 Buckeran V 5768 President WHEREAS We, RONG LU, residing at 826 NE 103rd St., Seattle, WA 98125, and RICHARD SILVESTRI, residing at Assignor, am listed as an inventor on a patent application entitled PRE-CACHING VIDEO CONTENT TO DEVICES USING LTE BROADCAST; having AT&T for a full description of which reference is Docket No. 2016-0176, US Patent Application Serial no. _ here made to an application for Letters Patent of the United States; and

WHEREAS, AT&T Mobility II LLC, organized and existing under the laws of Delaware and having an address at 1025 Lenox Park Blvd, Atlanta, GA 30319, (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; Assignor also authorizes the Assignee, any agent of the Assignee, and any attorney of the Assignee to fill in the U.S. Application Serial No. above, and any further identification information, if required;

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 Mobility II LLC** 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.

5/5

Attorney Docket No. 2016-0176_7785-1584

IN TESTIMONY WHEREOF, I have hereunto set my hand this, & day of March, 2017.

State of County of County

On this 2th day of March , 2017, before me a Notary Public in and

for the above County and State, personally appeared

, and acknowledged the execution of the foregoing

STACI BRINER

assignment as his/her free act and deed for the purpose herein set forth.

NOTARY PUBLIC DeKalb County State of Georgia My Comm. Expires March 8, 2020

Notary Public

My Commission Expires: