

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT3614238

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|---|------------------------------|
| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| GUANGCAI ZHOU | 04/03/2008 |
| ERNEST C. CHEN | 04/03/2008 |
| JOSEPH SANTORU | 04/03/2008 |
| JUDITH M. WANG | 04/03/2008 |
| RECEIVING PARTY DATA | |
| Name: | THE DIRECTV GROUP, INC. |
| Street Address: | 2260 E. IMPERIAL HIGHWAY |
| City: | EL SEGUNDO |
| State/Country: | CALIFORNIA |
| Postal Code: | 90245 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 13528347 |
| CORRESPONDENCE DATA | |
| Fax Number: | |
| <i>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.</i> | |
| Email: | janet.shibata@directv.com |
| Correspondent Name: | THE DIRECTV GROUP, INC. |
| Address Line 1: | 2230 E. IMPERIAL HIGHWAY |
| Address Line 2: | CA/LA5/A109 |
| Address Line 4: | EL SEGUNDO, CALIFORNIA 90245 |
| ATTORNEY DOCKET NUMBER: | PD-206083A |
| NAME OF SUBMITTER: | JANET SHIBATA |
| SIGNATURE: | /Janet Shibata/ |
| DATE SIGNED: | 11/12/2015 |
| Total Attachments: 3 | |
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PD-206083
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ASSIGNMENT

WHEREAS, GUANGCAI ZHOU, ERNEST C. CHEN, JOSEPH SANTORU and JUDITH M. WANG, as below named inventors of the city and state as stated below next to my name, have invented a **METHOD AND APPARATUS FOR IDENTIFYING CO-CHANNEL INTERFERENCE** for which application for Letters Patent of the United States has been executed by me on this day.


WHEREAS, The DIRECTV Group, Inc. (hereinafter referred to as the "Company"), a Delaware Corporation, having its principal place of business in El Segundo, California, is desirous of acquiring the entire and exclusive right, title and interest in, to and under said invention, said application and any and all Letters Patent that may be granted therefore in the United States and throughout the world;

NOW, THEREFORE, in consideration of the obligations voluntarily assumed by us and set forth in invention agreements between us and our employer, effective the date as stated below next to our names, and other good and valuable consideration, receipt of which is hereby acknowledged, we do hereby sell, assign and transfer to the Company, its successors, assigns or other legal representatives, the entire and exclusive right, title and interest in and to said invention invented by us, to said application and any and all applications which are continuations, continuations-in-part, divisions or substitutes of said application and any and all Letters Patent that may be granted therefore in the United States and throughout the world on any of said applications and to any and all reexaminations, reissues, renewals or extensions of said Letters Patent in the United States and throughout the world for the full term or terms for which said Letters patent may be granted in the United States and throughout the world; authorize and request The Commissioner of Patents and Trademarks of the United States and all foreign countries to issue all such Letters Patent to said Company, its successors, assigns or other legal representatives; covenant that no assignment, sale, agreement, transfer or encumbrance has been, or will be, made or entered into which would conflict with this assignment, sale and transfer; and agree to communicate to the Company, its successors, assigns or other legal representatives, upon request and at no cost or expense to us, any facts known by us respecting said invention, do all lawful acts, including the execution and delivery of all papers and proper oaths and giving of testimony that is deemed necessary or desirable by the Company, its successors, assigns or other legal representatives with regard to said invention for protecting, obtaining, maintaining and enforcing any and all of said Letters Patent in the United States and throughout the world for said invention and for perfecting, affirming,

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recording and maintaining the title of the Company, its successors, assigns or other legal representatives, and generally cooperate to the fullest extent in all matters pertaining to said invention, and any and all of said Letters Patent and the title thereto in the Company, its successors, assigns or other legal representatives.

IN WITNESS WHEREOF, we have executed this instrument.

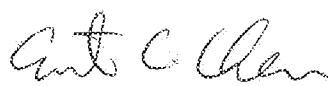
| | | |
|-------------------------------------|--|--------|
| FULL NAME OF SOLE OR JOINT INVENTOR | INVENTOR'S SIGNATURE | DATE |
| GUANGCAI ZHOU |  | 4/3/08 |
| RESIDENCE (CITY AND STATE) | | |
| Agoura Hills, California | | |

STATEMENT BY WITNESS

I, Janet Shibata, whose full post office address is 2230 E. Imperial Highway, El Segundo, California 90245
(address of witness)

was personally present and did see **GUANGCAI ZHOU**, who is known to me, execute the above assignment.

Janet Shibata 4-3-08
(signature of witness) (date)


| | | |
|-------------------------------------|--|--------|
| FULL NAME OF SOLE OR JOINT INVENTOR | INVENTOR'S SIGNATURE | DATE |
| ERNEST C. CHEN |  | 4-3-08 |
| RESIDENCE (CITY AND STATE) | | |
| San Pedro, California | | |

STATEMENT BY WITNESS

I, Janet Shibata, whose full post office address is 2230 E. Imperial Highway, El Segundo, California 90245
(address of witness)

was personally present and did see **ERNEST C. CHEN**, who is known to me, execute the above assignment.

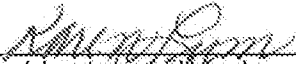
Janet Shibata 4-3-08
(signature of witness) (date)

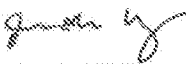
| FULL NAME OF SOLE OR JOINT INVENTOR | INVENTOR'S SIGNATURE | DATE |
|-------------------------------------|---|--------|
| JOSEPH SANTORU |  | 4/3/08 |
| RESIDENCE (CITY AND STATE) | | |
| Agoura Hills, California | | |

STATEMENT BY WITNESS

I, KAREN LUM, whose full post office address is 2230 E. Imperial Highway, El Segundo, California 90245
(address of witness)

was personally present and did see **JOSEPH SANTORU**, who is known to me, execute the above assignment.

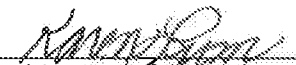
 4-3-2008
(signature of witness) (date)

| FULL NAME OF SOLE OR JOINT INVENTOR | INVENTOR'S SIGNATURE | DATE |
|-------------------------------------|---|----------|
| JUDITH M. WANG |  | 4-3-2008 |
| RESIDENCE (CITY AND STATE) | | |
| Irvine, California | | |

STATEMENT BY WITNESS

I, KAREN LUM, whose full post office address is 2230 E. Imperial Highway, El Segundo, California 90245
(address of witness)

was personally present and did see **JUDITH M. WANG**, who is known to me, execute the above assignment.

 4-3-2008
(signature of witness) (date)