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12-21-2004



PATENT
Attorney Docket No. 204035

TO: The Commissioner of Patents and Trademarks: Please record the attached original document(s) or copy(ies).

1. Submission Type

- ☒ New
☐ Resubmission (Non-Recordation)
Document #
☐ Correction of PTO Error
Reel Frame
☐ Corrective Document
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2. Nature of Conveyance:

- ☒ Assignment ☐ Security Agreement
☐ License ☐ Change of Name
☐ Merger ☐ Other:

19587 U.S. PTO
11/009333

3. Conveying Party(ies):

☐ Mark if additional names of conveying parties attached.

Name Feng-Wen Sun

Execution Date: 12/9/2004 (m/d/yyyy)

Name Lakshmi Iyer

Execution Date: 12/9/2004 (m/d/yyyy)

Name

Execution Date: (m/d/yyyy)

Name

Execution Date: (m/d/yyyy)

4. Receiving Party:

Name: The DIRECTV Group, Inc.
Address: 2250 East Imperial Highway
El Segundo, CA 90245

5. Correspondent Name and Address:

Name: The DIRECTV Group, Inc.
Address: RE/R11/A109
P.O. Box 956
El Segundo, CA 90245-0956

Please associate this document and the attached documents
with customer no. 20991.

6. Application Number(s) or Patent Number(s):

☐ Mark if additional numbers attached.

Either enter the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).

Patent Application Number(s)

Patent Number(s)

If this document is being filed together with a new Patent Application, enter the date that the patent
application was executed by the first named inventor.

12/9/2004 (m/d/yyyy)

7. Patent Cooperation Treaty (PCT) Numbers:

Enter PCT application number(s)
only if a U.S. Application Number
has not been assigned.

PCT
PCT

PCT
PCT

PCT
PCT

8. Number of Properties:

Enter the total number of properties involved: 1.

9. Fee Transmittal:

Fee amount for listed properties (37 CFR 3.41): \$ 40.00

Method of Payment: ☐ Enclosed

☒ Deposit Account Deposit Account No. 50-0383

Authorization to charge additional fees: ☒ Yes ☐ No

10. Statement and signature:

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of
the original document. Charges to deposit account are authorized as indicated herein.

Craig L. Plastrik, Reg. No. 41,254

Signature

Date

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Total number of pages comprising cover sheet: 0

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PATENT
REEL: 016078 FRAME: 0656

ASSIGNMENT

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WHEREAS, I, as below named sole inventor (if only one name is listed below) or joint inventor (if plural names are listed below) of the city and state as stated below next to my name, have invented a **METHOD AND APPARATUS FOR MINIMIZING CO-CHANNEL INTERFERENCE BY SCRAMBLING**:

- ☒ for which application for Letters Patent of the United States has been executed by me on this day; or
☐ which is embodied in U.S. Patent Application Serial No. _____ filed on _____.

WHEREAS, **THE DIRECTV GROUP, INC.**, 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 therefor in the United States and throughout the world;

NOW, THEREFORE, in consideration of the obligations voluntarily assumed by me and set forth in an invention agreement between me and my employer, effective the date as stated below next to my name, and other good and valuable consideration, receipt of which is hereby acknowledged, I do hereby sell, assign and transfer to **THE DIRECTV GROUP, INC.**, its successors, assigns or other legal representatives, the entire and exclusive right, title and interest in and to said invention invented by me, 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 therefor 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 **THE DIRECTV GROUP, INC.**, 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 DIRECTV GROUP, INC.**, its successors, assigns or other legal representatives, upon request and at no cost or expense to me, any facts known by me 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 DIRECTV GROUP, INC.**, 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, recording and maintaining the title of **THE DIRECTV GROUP, INC.**, 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 DIRECTV GROUP, INC.**, its successors, assigns or other legal representatives.

IN WITNESS WHEREOF, I have executed this instrument:

Full Name of Sole or Joint Inventor: Feng-Wen Sun	Inventor's Signature: <i>Feng Wen Sun</i>	Date: 12-9-04
Residence (City and State) Germantown, MD		INVENTION AGREEMENT DATE
Full Name of Joint Inventor: Lakshmi Iyer	Inventor's Signature: <i>Lakshmi</i>	Date: 12-09-04
Residence (City and State) Germantown, MD		INVENTION AGREEMENT DATE
Full Name of Joint Inventor:	Inventor's Signature:	Date:
Residence (City and State)		INVENTION AGREEMENT DATE
Full Name of Joint Inventor:	Inventor's Signature:	Date:
Residence (City and State)		INVENTION AGREEMENT DATE

STATE OF Maryland)
COUNTY OF Frederick) SS:
On 12-9-04 before me, Virginia L. Fogle
a Notary Public in and for said State, personally appeared Feng-Wen Sun
☐ personally known to me or ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the
within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their
signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
WITNESS my hand and official seal. Notary Public Virginia L. Fogle

VIRGINIA L. FOGLE
Notary Public
Frederick County
Maryland
My Commission Expires Feb 28, 2005

STATE OF Maryland)
COUNTY OF Frederick) SS:
On 12/9/04 before me, Virginia L. Fogle
a Notary Public in and for said State, personally appeared Lakshmi Iyer
☒ personally known to me or ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the
within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their
signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
WITNESS my hand and official seal. Notary Public Virginia L. Fogle

VIRGINIA L. FOGLE
Notary Public
Frederick County
Maryland
My Commission Expires Feb 28, 2005