

## PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT3491044

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
ROBERT TORRES	07/31/2015
JOHN BORDER	08/07/2015
JUN XU	08/20/2015
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	HUGHES NETWORK SYSTEMS, LLC
<b>Street Address:</b>	11717 EXPLORATION LANE
<b>City:</b>	GERMANTOWN
<b>State/Country:</b>	MARYLAND
<b>Postal Code:</b>	20876
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	14814796
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(313)528-6923
<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>	
<b>Phone:</b>	313-528-4882
<b>Email:</b>	docket@b2iplaw.com
<b>Correspondent Name:</b>	BEJIN BIENEMAN PLC
<b>Address Line 1:</b>	300 RIVER PLACE DRIVE, SUITE 1650
<b>Address Line 4:</b>	DETROIT, MICHIGAN 48207
<b>ATTORNEY DOCKET NUMBER:</b>	01146-0015
<b>NAME OF SUBMITTER:</b>	STEPHEN J. KONTOS
<b>SIGNATURE:</b>	/Stephen J. Kontos/
<b>DATE SIGNED:</b>	08/20/2015
<b>Total Attachments: 5</b>	
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**ASSIGNMENT AND AGREEMENT IN AN APPLICATION FOR  
LETTERS PATENT OF THE UNITED STATES OF AMERICA**

WHEREAS, Robert Torres residing at 5680 Hearthstone Trl., New Market, MD 21774-7017; John Border residing at 7386 Freestate Drive, Middletown, MD 21769; and Jun Xu residing at 22 Seek Ct., Takoma Park, MD 20912 (hereinafter, singularly and collectively "Assignor") has solely and/or have jointly (as appropriate) invented and/or discovered certain new and useful invention, process, machine, manufacture, or composition of matter, or any new and useful improvement in an invention as described in an application for Letters Patent entitled **"CONGESTION CONTROL FOR SCRAMBLED CODED MULTIPLE ACCESS (SCMA)"** filed in and/or with the United States Patent and Trademark Office on July 31, 2015, and which has been assigned Application Serial Number 14/814,796 and which is further identified by the EchoStar Docket No. set forth above (hereinafter, the "Invention"); and

WHEREAS, Hughes Network Systems, LLC a limited liability company organized and existing under the laws of the State of Delaware, United States of America and having a principal place of business of 11717 Exploration Lane, Germantown, Maryland 20876 (hereinafter, the "Assignee") desires to acquire all rights, title and interest in and to the Invention, including, but not limited to, all rights, title and interest in and to past, present and future damages, injunctive relief and to any and all other additional rights, title, interest, relief and/or remedies granted by any legislative, judicial, quasi-judicial, administrative or other body, or otherwise; and

WHEREAS, Assignor, to the extent they own any right, title and interest in and to the Invention are desirous of assigning any and all such rights, title and/or interest to Assignee.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Assignor hereby sells, assigns, transfers and sets over unto Assignee and its legal representatives, successor and assigns, the entire right, title and interest, including any all rights in and/or to past, present and future damages, injunctive relief and/or any other remedy and relief granted by a legislative, judicial, quasi-judicial or administrative body, in and to said Invention, said application, for any and all non-provisional, national, international, foreign, and regional applications corresponding and/or claiming priority thereto, any divisions, continuations, continuation-in-parts, reissues, reexaminations, renewals, and extensions thereof, and the Letters Patent, both foreign and domestic, that may or shall issue thereon, and does request the Commissioner of Patents to issue said Letters Patent to the Assignee, consistent with the terms of this agreement.

Assignor hereby authorizes Assignee to insert in this instrument the filing date and Application Serial Number in the above fields if not already present at the time of execution of this instrument.

Assignor hereby declares that he/she is the sole inventor (if only one inventor is named herein) or an original, first and joint inventor (if plural inventors are named herein) of the Invention. UPON SAID CONSIDERATION, Assignor hereby covenants and agrees with Assignee that they will not execute any writing or do any act whatsoever conflicting with these presents, and agrees that, when requested, he/she will, without charge to Assignee but at its expense, execute such additional assignments, declarations and other writings and do such additional acts as said

Assignee may deem necessary or desirable to perfect the Assignee's enjoyment of this grant, and render all necessary assistance in making application for and obtaining original, continuation, continuation-in-part, divisional, renewal, reissued or extended Letters Patent of the United States, or of any and all foreign countries, on said invention, and in enforcing any rights or chooses in action accruing as a result of such applications or patents, by giving testimony in any proceedings or transactions involving such applications or patents, and by executing preliminary statements and other affidavits, it being understood that the foregoing covenant and agreement shall bind, and inure to the benefit of, the assigns and legal representatives of both parties.

Assignor agrees that he/she will communicate to Assignee or its representatives any facts known to Assignor respecting said inventions within a reasonable time of discovering or coming into possession of the same.

Assignor authorizes and empowers Assignee, its successors, assigns or nominees, to make application for patent or other form of protection for said inventions in its or their own name, or in Assignor's name, in any and all countries to invoke and claim for any application for patent or other form of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from me.

Assignor hereby consent that a copy of this Assignment shall be deemed a full legal and formal equivalent of any assignment, consent to file or like document which may be required in any country for any purpose and more particularly in proof of the right of Assignee or its successors, assigns or nominees to apply for patent or other proper protection for said inventions, and to claim the aforesaid benefits of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it.

Assignor covenants with Assignee, its successors, assigns, legal representatives, and nominees, that to the best of Assignor's knowledge the right, title and interest herein conveyed are free and clear of any encumbrance, and that Assignor has the full right to convey the same as herein expressed.

This Agreement and Assignment supersedes all other assignments, agreements and addendums related to the above-identified application.

After this Assignment has been recorded, please return it to:

Attn: Tim Jezek  
Legal Department  
EchoStar Technologies L.L.C.  
100 Inverness Terrace East  
Englewood, CO 80112

**JOINT**

Inventor (1): Robert Torres  
(Name)

[Signature]  
(Signature in Full)

On this 31st day of July, 2015, before me a notary public in and for the county of Montgomery in the State of Maryland, appeared **ROBERT TORRES**, who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he signed, seals and delivered ~~the same instrument~~ as a free and voluntary act for the use and purposes therein set forth.

[Signature]  
My Commission Expires: 2/18/2017  
Notary Public

Notary Public  
Montgomery County  
Maryland  
My Commission Expires Feb 18, 2017  
(Seal)

**JOINT**

Inventor (2): John Border  
(Name)

(Signature in Full)

On this 7 day of August, 2015, before me a notary public in and for the county of Montgomery in the State of Maryland, appeared **JOHN BORDER**, who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he signed, seals and delivered the same instrument as a free and voluntary act for the use and purposes therein set forth.

Gloria Jean Allen  
My Commission Expires: March 4, 2017  
Notary Public

**GLORIA JEAN ALLEN**  
Notary Public-Maryland  
Montgomery County  
My Commission Expires  
**March 4, 2017**

**JOINT**

Inventor (3): Jun Xu  
(Name)

[Signature]  
(Signature in Full)

On this 20 day of August, 2015, before me a notary public in and for the county of Montgomery in the State of Maryland, appeared JUN XU, who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he signed, seals and delivered the same instrument as a free and voluntary act for the use and purposes therein set forth.

Gloria Jean Allen  
My Commission Expires: March 4, 2017  
Notary Public

GLORIA JEAN ALLEN  
Notary Public-Maryland  
Montgomery County  
My Commission Expires  
March 04, 2017