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PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4300574

SUBMISSION TYPE:		NEW ASSIGNMENT	
ATURE OF CONVEYAN	ICE:	ASSIGNMENT	
CONVEYING PARTY DA	ATA		
	Execution Date		
WILLIAM VOLKMAN	02/27/2017		
MICHEN	11/04/2016		
DANNY J. MINNICK	02/24/2017		
JEAN MCAULIFFE		02/27/2017	
RECEIVING PARTY DA	ТА		
Name:	ECHOS	TAR TECHNOLOGIES L.L.C.	
Street Address:	100 INVERNESS TERRACE EAST		
City:	ENGLEWOOD		
State/Country:	COLORADO		
Postal Code:	80112		
Property Type		Number	
Property Type Application Number:		Number 15243639	
Property Type Application Number:	-		
Application Number:		15243639	
Application Number: CORRESPONDENCE DA	ATA ((303)571-4321	
Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be	ATA (e sent to	15243639	
Application Number: CORRESPONDENCE D Fax Number: <i>Correspondence will be</i> <i>using a fax number, if p</i> Phone:	ATA (e sent to provided;	15243639 (303)571-4321 <i>the e-mail address first; if that is unsu</i> <i>; if that is unsuccessful, it will be sent</i> 303-571-4000	
Application Number: CORRESPONDENCE D Fax Number: <i>Correspondence will be</i> <i>using a fax number, if p</i> Phone: Email:	ATA (e sent to provided,	(303)571-4321 <i>the e-mail address first; if that is unsu</i> <i>; if that is unsuccessful, it will be sent</i> 303-571-4000 <francour@kilpatricktownsend.com< td=""><td>via US Mail.</td></francour@kilpatricktownsend.com<>	via US Mail.
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Application Number: CORRESPONDENCE D Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1:	ATA (e sent to provided, } }	(303)571-4321 <i>the e-mail address first; if that is unsu</i> <i>; if that is unsuccessful, it will be sent</i> 303-571-4000 <francour@kilpatricktownsend.com <ilpatrick &="" stocktom<br="" townsend="">1100 PEACHTREE STREET</ilpatrick></francour@kilpatricktownsend.com 	via US Mail.
Application Number: CORRESPONDENCE D Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name:	ATA e sent to provided, i k i i	(303)571-4321 <i>the e-mail address first; if that is unsu</i> <i>; if that is unsuccessful, it will be sent</i> 303-571-4000 <francour@kilpatricktownsend.com <ilpatrick &="" stocktom<="" td="" townsend=""><td>via US Mail.</td></ilpatrick></francour@kilpatricktownsend.com 	via US Mail.
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Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 2: Address Line 4:	ATA (e sent to provided, d h h h	(303)571-4321 <i>the e-mail address first; if that is unsu</i> <i>; if that is unsuccessful, it will be sent</i> 303-571-4000 <francour@kilpatricktownsend.com <ilpatrick &="" stocktom<br="" townsend="">1100 PEACHTREE STREET SUITE 2800 ATLANTA, GEORGIA 30309</ilpatrick></francour@kilpatricktownsend.com 	via US Mail.
Application Number: CORRESPONDENCE D Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET NU	ATA (e sent to provided, d h h h	(303)571-4321 the e-mail address first; if that is unsu ; if that is unsuccessful, it will be sent 303-571-4000 <francour@kilpatricktownsend.com <ilpatrick &="" stocktom<br="" townsend="">1100 PEACHTREE STREET SUITE 2800 ATLANTA, GEORGIA 30309 P2015-06-21.1 (1013920)</ilpatrick></francour@kilpatricktownsend.com 	via US Mail.
Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET NU NAME OF SUBMITTER:	ATA (e sent to provided, d h h h	(303)571-4321 the e-mail address first; if that is unsu ; if that is unsuccessful, it will be sent 303-571-4000 <francour@kilpatricktownsend.com <ilpatrick &="" stockton<br="" townsend="">1100 PEACHTREE STREET SUITE 2800 ATLANTA, GEORGIA 30309 P2015-06-21.1 (1013920) KATIE B. FRANCOUR</ilpatrick></francour@kilpatricktownsend.com 	via US Mail.
Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 2: Address Line 2: Address Line 4: ATTORNEY DOCKET NU JAME OF SUBMITTER: BIGNATURE:	ATA (e sent to provided, i k k k l MBER:	(303)571-4321 the e-mail address first; if that is unsu ; if that is unsuccessful, it will be sent 303-571-4000 kfrancour@kilpatricktownsend.com KILPATRICK TOWNSEND & STOCKTON 1100 PEACHTREE STREET SUITE 2800 ATLANTA, GEORGIA 30309 P2015-06-21.1 (1013920) KATIE B. FRANCOUR /Katie B. Francour/ 03/02/2017	via US Mail.

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ASSIGNMENT AND AGREEMENT IN AN APPLICATION FOR LETTERS PATENT

WHEREAS, William Volkman, Mi Chen, Danny J. Minnick, and Jean McAuliffe (hereinafter, singularly and collectively "Assignor") have jointly 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 "SYSTEMS AND METHODS FOR SEARCH AND CATEGORIZATION" filed in and/or with the United States Patent and Trademark Office on August 22, 2016, and which has been assigned Application Serial Number <u>15/243,639</u> and which is further identified by the EchoStar Docket No. set forth above (hereinafter, the "Invention"); and

WHEREAS, EchoStar Technologies LLC, a limited liability company organized and existing under the laws of the State of Texas, United States of America and having a principal place of business of 100 Inverness Terrace East, Englewood, Colorado 80112 (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-iti-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 an original, first and joint inventor 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

PATENT REEL: 041446 FRAME: 0340

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: Max S. Gratton Legal Department EchoStar Technologies LLC 100 Inverness Terrace East Englewood, CO 80112

PATENT REEL: 041446 FRAME: 0341

JOINT		
Paramanan Million Stat	Sama a	4.1.1.1.1.
Inventor: <u>William Vol</u>	(Name)	(Signature in Poll)
	fe meent	(viginion v ur s are)
Citizenship: U.S.		
Post Office Address:	11421 Uptown A	Ave #314. Broomfield. CO 80021
Residence: 11421 Upto	wn Ave #314, Broo	imfield, CO 80021
On this day of day of	of	
that he signed, seals and therein set forth.	and person whose i I delivered the same	e instrument as a free and voluntary act for the use and purposes
My Commission Expires		(Seal)
теу континганын картоз		(ocal)
Notary Public		
Notary Public JOINT		
Notary Public		(Signature in Full)
Notary Public JOINT Inventor: <u>Mi Ch</u> Citizenship: U.S.	<u>en</u> (Name)	
Notery Public JOINT Inventor: <u>Mi Ch</u> Citizenship: U.S. Post Office Address;	en (Name) 2867 S. Xanadu	(Signature in Full) Way, Aurona, CO 80014
Notary Public JOINT Inventor: <u>Mi Ch</u> Citizenship: U.S. Post Office Address: Residence: 2867 S. Xan	m (Name) 2867 S. Xanadu adu Way, Aurora, ((Signature in Full) Way, Aurora, CO 80014 CO 80014
Notary Public JOINT Inventor: <u>Mi Ch</u> Citizenship: U.S. Post Office Address: Residence: 2867 S. Xan On this day c ime to be the same perso	en (Name) 2867 S. Xanadu adu Way, Aurora, (of n the State of m whose name is s	(Signature in Pull) Way, Aurona, CO 80014

Echostar Docket No. P2015-06-21.1 (1013920)

avvabat: <u>vvb</u>	liam Volkman	
	(Name)	(Signature in Full)
Cifizenship: Post Office Add		Ave #314_Broomfield, CO 80021
Residence: 11-	421 Uptown Ave #314, Brod	omfield, CO 80021
nown to me to	in the State of be the same person whose seals and delivered the sam	, 2016, before me a notary public in and for the county o , appeared William Volkman, who is personally name is subscribed to the foregoing instrument, and acknowledged he instrument as a free and voluntary act for the use and purpose
My Commissio Notary Public	n Expires:	
IOINT		
Inventor	Mi Chen	(Signature in Full)
Citizenship:		
On this <u>40</u> me to be the signed, seals ar forth.	in the State of	2016, before me a notary public in and for the county o appeared Mi Chen, who is personally known to subscribed to the foregoing instrument, and acknowledged that h ment as a free and voluntary act for the use and purposes therein se
Notary Public	*****	

	a".	Lebustar Bocket No. P2645-06-273 (101)
		~ 100
JOINT		
Inventor:Darm	<u>v I. Minnick</u> (Name)	- (Signature //s Full)
Citizenship: U.S.		/
Post Office Address:	<u> </u>	ve. Castle Rock. CO. (0109
Residence: 801 N. Fav	er Drive, Castle Rod	k, CO 80109
known to me to be the s	ame person whose n d delivered the same	2017, before me a notary public in and for the county of <u>AAAAo</u> , appeared Danay J. Mianick, who is personally name is subscribed to the foregoing instrument, and acknowledged instrument as a free and purposes ANTHONY MEDINA ANTHONY MEDINA NOTARY PUBLIC STATE OF COLORADO NOTARY PUBLIC NOTARY PUBLIC NOTARY DISLOC
Notary Public	·····	(*****)
JOINT		
Inventor:lean_		
	(Name)	(Signature in Full)
Citizenship: U.S. Post Office Address:	2960 Lafuyette E	2Boukler. CO 80305
Residence: 2960 Lafay	ette Dr., Boulder, C(O 80305
i known to me to be the s	same person wnose r	2017, before me a notary public in and for the county of appeared Jean McAuliffe, who is personally name is subscribed to the foregoing instrument, and acknowledged e instrument as a free and voluntary act for the use and purposes
My Commission Expire Notary Public	s:	

68556973V.1

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Echostar Docket No. P2015-06-214 (1013920)

Inventor:	Danny J. Minnick	
	(Name)	(Signature in Full)
Citizenship: Post Office Ad	U.S. ddress: <u>80) N. Faver Dri</u>	rive, Castle Rock, CO 80109
Residence: 8(01 N. Faver Drive, Castle Rock	ck, CO 80109
On this known to me t that he signed, therein set fort	l, seals and delivered the same	2017, before me a notary public in and for the county appeared Danny J. Minnick, who is personal name is subscribed to the foregoing instrument, and acknowledge te instrument as a free and voluntary act for the use and purpos
My Commissie Notary Public	ion Expires:	(Scal)
JOINT		
Inventor:	lean McAuliffe(Name)	(Signatyle in Eall)
Citizenship:	U.S.	and the second
Post Office Ad	Idress: <u>2960 Lafayette D</u>	Dr., Boulder, CO 80305
Residence: 29	960 Lafayette Dr., Boulder, CC	O 80305
On this	day of day in the State of	, 2017, before me a notary public in and for the county appeared Jean McAuliffe, who is personal name is subscribed to the foregoing instrument, and acknowledge
known to me t that he signed, therein set fort	l, seals and delivered the same	name is subscribed to the foregoing instrument, and acknowledge te instrument as a free and voluntary act for the use and purpose
My Commissie		
	on Expires:	
68536973V.1		