PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT3233606

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
HUGHES NETWORK SYSTEMS LLC	02/19/2015

RECEIVING PARTY DATA

Name:	WELLS FARGO BANK NATIONAL ASSOCIATION, AS COLLATERAL AGENT
Street Address:	625 MARQUETTE AVE
Internal Address:	11TH FLOOR
City:	MINNEAPOLIS
State/Country:	MINNESOTA
Postal Code:	55470

PROPERTY NUMBERS Total: 25

Property Type	Number
Patent Number:	8887024
Patent Number:	8879674
Patent Number:	8867601
Patent Number:	8842583
Patent Number:	8793745
Patent Number:	8782489
Patent Number:	8779872
Patent Number:	8711759
Patent Number:	8705357
Patent Number:	8687493
Patent Number:	8683292
Patent Number:	8675486
Patent Number:	8674758
Patent Number:	8660006
Application Number:	14265356
Application Number:	14215043
Application Number:	12412736
Application Number:	14028625
Application Number:	13933774

Property Type	Number
Application Number:	13890643
Application Number:	13827839
Application Number:	13893435
Application Number:	13718203
Application Number:	13666706
Application Number:	13622348

CORRESPONDENCE DATA

Fax Number:

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.

Phone:	(303) 706-4506
Email:	max.gratton@echostar.com
Correspondent Name:	MAX GRATTON
Address Line 1:	100 INVERNESS TERRACE EAST
Address Line 4:	ENGLEWOOD, COLORADO 80112

NAME OF SUBMITTER:	MAX S GRATTON
SIGNATURE:	/Max S Gratton/ (Reg. No 56,541)
DATE SIGNED:	02/19/2015

Total Attachments: 5
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Patent Security Agreement

Patent Security Agreement, dated as of February 19, 2015, by Hughes Network Systems, LLC, a Colorado limited liability company ("Pledgor"), in favor of Wells Fargo Bank, National Association, in its capacity as collateral agent pursuant to the Indenture (in such capacity, the "Collateral Agent").

WITNESSETH:

WHEREAS, the Pledgor is party to a Security Agreement dated as of June 8, 2011 (as amended, amended and restated, supplemented or otherwise modified from time to time, the "Security Agreement") in favor of the Collateral Agent pursuant to which the Pledgor is required to execute and deliver this Patent Security Agreement;

NOW, THEREFORE, in consideration of the premises and to induce the Collateral Agent, for the benefit of the Secured Parties, to enter into the Indenture, the Pledgor hereby agrees with the Collateral Agent as follows:

SECTION 1.   Defined Terms. Unless otherwise defined herein, terms defined in the Security Agreement and used herein have the meaning given to them in the Security Agreement.

SECTION 2.   Grant of Security Interest in Patent Collateral. The Pledgor hereby pledges and grants to the Collateral Agent for the benefit of the Secured Parties a lien on and security interest in and to all of its right, title and interest in, to and under all the following Pledged Collateral of the Pledgor:

(a) Patents of the Pledgor listed on Schedule I attached hereto; and

(b) all Proceeds of any and all of the foregoing (other than Excluded Property).

SECTION 3.   Security Agreement. The security interest granted pursuant to this Patent Security Agreement is granted pursuant to the security interest granted to the Collateral Agent under the Security Agreement and the Pledgor hereby acknowledges and affirms that the rights and remedies of the Collateral Agent with respect to the security interest in the Patents made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Patent Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control unless the Collateral Agent shall otherwise determine.

SECTION 4.   Termination. Upon the payment in full of the Secured Obligations and termination of the Security Agreement, the Collateral Agent shall execute, acknowledge, and deliver to the Pledgor an instrument in writing in recordable form releasing the collateral pledge, grant, assignment, lien and security interest in the Patents under this Patent Security Agreement.
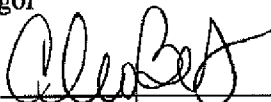
SECTION 5.   Counterparts. This Patent Security Agreement may be executed in any number of counterparts, all of which shall constitute one and the same instrument, and any party hereto may execute this Patent Security Agreement by signing and delivering one or more counterparts.

SECTION 6.   Governing Law. This Patent Security Agreement and the transactions contemplated hereby, and all disputes between the parties under or relating to this Patent Security Agreement or the facts or circumstances leading to its execution, whether in contract, tort or otherwise, shall be construed in accordance with and governed by the laws (including statutes of limitation) of the State of New York, without regard to conflicts of law principles that would require the application of the laws of another jurisdiction.
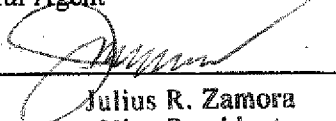
[signature page follows]

IN WITNESS WHEREOF, the Pledgor and the Collateral Agent have caused this Patent Security Agreement to be duly executed and delivered by their duly authorized officer as of the date first set forth above.

HUGHES NETWORK SYSTEMS, LLC,

as Pledgor

By: _____

Name: Cleo V. Belmonte

Title: Assistant Secretary

WELLS FARGO BANK, NATIONAL ASSOCIATION,

as Collateral Agent

By: _____

Name: Julius R. Zamora

Title: Vice President

SCHEDULE I
to
PATENT SECURITY AGREEMENT
PATENT REGISTRATIONS AND PATENT APPLICATIONS

United States Patent Registrations:

Owner	Registration Number	Name
Hughes Network Systems, LLC	8,887,024	APPARATUS AND METHOD FOR IMPROVED MODULATION AND CODING SCHEMES FOR BROADBAND SATELLITE COMMUNICATIONS SYSTEMS
Hughes Network Systems, LLC	8,879,674	SYSTEM AND METHOD FOR CORRELATING RECEIVED SIGNAL OVER TIME AND FREQUENCY
Hughes Network Systems, LLC	8,867,601	SYSTEM AND METHOD FOR ITERATIVE NONLINEAR COMPENSATION FOR INTERMODULATION DISTORTION IN MULTICARRIER COMMUNICATION SYSTEMS
Hughes Network Systems, LLC	8,842,583	SYSTEM AND METHOD FOR MAINTAINING DATA CONNECTIVITY OVER A SATELLITE LINK
Hughes Network Systems, LLC	8,793,745	METHOD AND APPARATUS FOR A DATA RATE CONTROLLER FOR A CODE BLOCK MULTIPLEXING SCHEME
Hughes Network Systems, LLC	8,782,489	METHOD AND SYSTEM FOR PROVIDING LOW DENSITY PARITY CHECK (LDPC) ENCODING AND DECODING
Hughes Network Systems, LLC	8,779,872	METHOD AND APPARATUS FOR INTEGRATED WAVEGUIDE TRANSMIT-RECEIVE ISOLATION AND FILTERING
Hughes Network Systems, LLC	8,711,759	FRAME TIMING SYNCHRONIZATION IN A GEOSTATIONARY SATELLITE SYSTEM
Hughes Network Systems, LLC	8,705,357	METHOD AND SYSTEM FOR CONTROLLING TCP TRAFFIC WITH RANDOM EARLY DETECTION AND WINDOW SIZE ADJUSTMENTS
Hughes Network Systems, LLC	8,687,493	METHOD AND SYSTEM FOR INROUTE BANDWIDTH ALLOCATION SUPPORTING MULTIPLE TRAFFIC PRIORITIES IN A SATELLITE NETWORK
Hughes Network Systems, LLC	8,683,292	METHOD AND SYSTEM FOR PROVIDING LOW DENSITY PARITY CHECK (LDPC) CODING FOR SCRAMBLED CODED MULTIPLE ACCESS (SCMA)
Hughes Network Systems, LLC	8,675,486	METHOD AND SYSTEM FOR EFFICIENT FLOW CONTROL IN A SPOT BEAM SATELLITE SYSTEM
Hughes Network Systems, LLC	8,674,758	METHOD AND APPARATUS FOR IMPROVED HIGH ORDER MODULATION
Hughes Network Systems, LLC	8,660,006	METHOD AND SYSTEM FOR TRAFFIC MANAGEMENT AND RESOURCE ALLOCATION ON A SHARED ACCESS NETWORK

United States Patent Applications:

Owner	Registration Number	Name
Hughes Network Systems, LLC	14/265,356	FRAME TIMING SYNCHRONIZATION IN A GEOSTATIONARY SATELLITE SYSTEM
Hughes Network Systems, LLC	14/215,043	DATA COMPRESSION FOR PRIORITY BASED DATA TRAFFIC, ON AN AGGREGATE TRAFFIC LEVEL, IN A MULTI STREAM COMMUNICATIONS SYSTEM
Hughes Network Systems, LLC	14/214,736	STAGED DATA COMPRESSION, INCLUDING BLOCK LEVEL LONG RANGE COMPRESSION, FOR DATA STREAMS IN A COMMUNICATIONS SYSTEM
Hughes Network Systems, LLC	14/028,625	METHOD AND APPARATUS FOR A TRIPLE USE SATELLITE SYSTEM
Hughes Network Systems, LLC	13/933,774	APPARATUS AND METHOD FOR IMPROVED MODULATION AND CODING SCHEMES FOR BROADBAND SATELLITE COMMUNICATIONS SYSTEMS
Hughes Network Systems, LLC	13/890,643	APPARATUS AND METHOD FOR IMPROVED MODULATION AND CODING SCHEMES FOR BROADBAND SATELLITE COMMUNICATIONS SYSTEMS
Hughes Network Systems, LLC	13/827,839	DETERMINING ELIGIBILITY FOR MULTIPLE CLIENT MEDIA STREAMING
Hughes Network Systems, LLC	13/893,435	SYSTEM AND METHOD FOR ESTIMATING AN AMPLIFIER OPERATING POINT USING MEASUREMENTS AT A RECEIVER
Hughes Network Systems, LLC	13/718,203	METHOD AND SYSTEM FOR OPTIMIZED OPPORTUNISTIC TRANSMISSION OF DOMAIN NAME REFERENCE INFORMATION
Hughes Network Systems, LLC	13/666,706	REAL-TIME SIGNAL VALIDATION METHOD AND SYSTEM
Hughes Network Systems, LLC	13/622,348	APPARATUS AND METHOD FOR IMPROVED MODULATION AND CODING SCHEMES FOR BROADBAND SATELLITE COMMUNICATIONS SYSTEMS