

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5090107

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST
CONVEYING PARTY DATA	
Name	Execution Date
HUGHES NETWORK SYSTEMS, LLC	07/26/2018
RECEIVING PARTY DATA	
Name:	WELLS FARGO BANK, NATIONAL ASSOCIATION - AS COLLATERAL AGENT
Street Address:	150 E. 42ND STREET, 40TH FLOOR
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10017
PROPERTY NUMBERS Total: 8	
Property Type	Number
Patent Number:	9942895
Patent Number:	9985874
Patent Number:	9948503
Patent Number:	9973580
Patent Number:	9942082
Application Number:	15986771
Application Number:	16010526
Application Number:	15992154
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:	cory.myers@hughes.com
Correspondent Name:	HUGHES NETWORK SYSTEMS, LLC
Address Line 1:	11717 EXPLORATION DRIVE
Address Line 4:	GERMANTOWN, MARYLAND 20876
NAME OF SUBMITTER:	CORY L MYERS
SIGNATURE:	/Cory L. Myers/ Reg No. 68,618
DATE SIGNED:	08/09/2018

Total Attachments: 6

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Patent Security Agreement

Patent Security Agreement, dated as of July ____, 2018, by Hughes Network Systems, LLC, a Delaware limited liability company (the "Pledgor"), in favor of Wells Fargo Bank, National Association, in its capacity as collateral agent (the "Collateral Agent") pursuant to (i) that certain Secured Indenture dated as of June 1, 2011, by and among Hughes Satellite Systems Corporation, the guarantors party thereto, and Wells Fargo Bank, National Association, as trustee and Collateral Agent (as supplemented, the "2011 Indenture"), and (ii) that certain Secured Indenture dated as of July 27, 2016, by and among Hughes Satellite Systems Corporation, the guarantors party thereto, the Collateral Agent and U.S. Bank National Association, as trustee (as supplemented, the "2016 Indenture" and, together with the 2011 Indenture, the "Indentures").

WITNESSETH:

WHEREAS, the Pledgor is a party to a Security Agreement dated as of June 8, 2011 as supplemented by the Joinder Agreement, dated as of March 28, 2014, the Additional Secured Party Joinder, dated as of July 27, 2016 and the Joinder Agreements dated as of March 23, 2017 and August 10, 2017 (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 each 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.

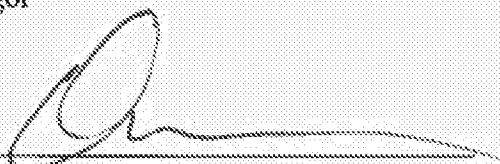
SECTION 5. Counterparts. This Patent Security Agreement may be executed in any number of counterparts, all of which shall constitute one and the same instrument, and any party hereto may execute this Patent Security Agreement by signing and delivering one or more counterparts.

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: Dean A. Manson

Title: Executive Vice President, General Counsel
and Secretary

**WELLS FARGO BANK, NATIONAL
ASSOCIATION,**
as Collateral Agent

By: _____

Name:

Title:

SCHEDULE I
to
PATENT SECURITY AGREEMENT
PATENT REGISTRATIONS AND PATENT APPLICATIONS

United States Patent Registrations:

Hughes Network Systems LLC	14814782	BURST GROUPING WITH REDUCED OVERHEAD
Hughes Network Systems LLC	14872173	NETWORK TRAFFIC SPLIT AMONG MULTIPLE PATHS
Hughes Network Systems LLC	14921050	GATEWAY REDUNDANCY PROTOCOL FOR COMMUNICATIONS NETWORKS
Hughes Network Systems LLC	14706951	STATE-BASED INTERCEPT OF INTERACTIVE COMMUNICATIONS NETWORK CONNECTIONS FOR PROVISION OF TARGETED, STATUS-BASED MESSAGING
Hughes Network Systems LLC	14872173	NETWORK TRAFFIC SPLIT AMONG MULTIPLE PATHS
Hughes Network Systems LLC	14706951	STATE-BASED INTERCEPT OF INTERACTIVE COMMUNICATIONS NETWORK CONNECTIONS FOR PROVISION OF TARGETED, STATUS-BASED MESSAGING
Hughes Network Systems LLC	14706951	STATE-BASED INTERCEPT OF INTERACTIVE COMMUNICATIONS NETWORK CONNECTIONS FOR PROVISION OF TARGETED, STATUS-BASED MESSAGING
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Hughes Network Systems LLC	14706951	STATE-BASED INTERCEPT OF INTERACTIVE COMMUNICATIONS NETWORK CONNECTIONS FOR PROVISION OF TARGETED, STATUS-BASED MESSAGING
Hughes Network Systems LLC	14862666	MODULATION AND CODING FOR A HIGH ALTITUDE PLATFORM

Applications:¹

Hughes Network Systems LLC	15986771	SYSTEM AND METHOD FOR GROUND BASED BEAM FORMING (GBBF) FOR VERY HIGH THROUGHPUT SATELLITE (VHTS) SYSTEMS
Hughes Network Systems LLC	16010526	SYSTEM AND METHOD FOR ASYNCHRONOUS MULTI-STREAM TRANSMISSION FOR NOMA
Hughes Network Systems LLC	15992154	SYSTEM AND METHOD FOR EXTRACTING SATELLITE TO GROUND LINK QUALITY USING SATELLITE TELEMETRY SIGNAL AND LOW COMPLEXITY

¹ List excludes unpublished applications.


Hughes Network Systems LLC	62659349	RECEIVER MAINTAINING AND DISTRIBUTING STATE DUE TO TEMPORARY FAILURES IN A SHARED BANDWIDTH NETWORK
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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: Dean A. Manson
Title: Executive Vice President, General Counsel
and Secretary

**WELLS FARGO BANK, NATIONAL
ASSOCIATION,**
as Collateral Agent

By:  _____
Name:
Title: **Alexander Pabon**
Assistant Vice President