

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
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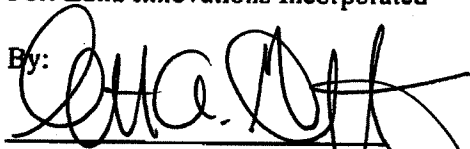
SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
LUNA INNOVATIONS INCORPORATED	03/15/2017
RECEIVING PARTY DATA	
Name:	INTUITIVE SURGICAL OPERATIONS, INC.
Street Address:	1020 KIFER ROAD
City:	SUNNYVALE
State/Country:	CALIFORNIA
Postal Code:	94086
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	14119797
CORRESPONDENCE DATA	
Fax Number:	(703)816-4100
<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>	
Phone:	703-816-4000
Email:	krm@nixonvan.com
Correspondent Name:	JOHN R. LASTOVA
Address Line 1:	901 NORTH GLEBE ROAD, 11TH FLOOR
Address Line 4:	ARLINGTON, VIRGINIA 22203
ATTORNEY DOCKET NUMBER:	JRL-6094-30
NAME OF SUBMITTER:	JOHN R. LASTOVA
SIGNATURE:	/John R. Lastova/
DATE SIGNED:	07/12/2017
Total Attachments: 7	
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CONFIRMATORY ASSIGNMENT AGREEMENT

This Confirmatory Assignment Agreement (the "Agreement") is made March 15, 2017, by and between Intuitive Surgical Operations, Inc., a corporation organized and existing under the laws of the State of Delaware, U.S.A. and having a place of business at 1020 Kifer Road, Sunnyvale, California 94086, ("Intuitive"), and Luna Innovations Incorporated, a corporation organized and existing under the laws of the State of Delaware, U.S.A. and having a place of business in Roanoke, Virginia ("Luna").

The Parties confirm that, under the Intellectual Property Assignment entered into by the Parties as of January 17, 2014 (the "IP Assignment", attached here and made a part of this Agreement) Luna had assigned, and agrees to assign, to Intuitive all rights that the inventors of the Transferred Intellectual Property (as defined in the IP Assignment) has assigned to Luna for the Transferred Intellectual Property. To the extent that Luna holds any rights to the Transferred Intellectual Property, Luna hereby assigns to Intuitive all rights it holds in the Transferred Intellectual Property.

For: Luna Innovations Incorporated

By: 

Name: Scott A Graeff

Title: Chief Strategy Officer

For: Intuitive Surgical Operations, Inc.

By:



Name: Frank Nguyen

Title: VP of IP and Licensing

THIS INTELLECTUAL PROPERTY ASSIGNMENT ("*Assignment*") is made effective as of January 17, 2014 (the "*Effective Date*"), by and between Luna Innovations Incorporated, a Delaware corporation ("*Seller*"), and Intuitive Surgical Operations, Inc., a Delaware corporation having its principal place of business at 1266 Kifer Road, Sunnyvale, California 94086 ("*Purchaser*") (each a "*Party*" and collectively, the "*Parties*").

BACKGROUND

A. This Assignment is entered into by Seller and Purchaser pursuant to that certain Asset Purchase Agreement (the "*Purchase Agreement*"), dated as of January 17, 2014, by and between Seller and Purchaser and Intuitive Surgical International, Ltd, a Cayman Islands company an indirect and wholly-owned subsidiary of Purchaser ("*ISIL*"), whereby Seller has agreed to sell and Purchaser has agreed to purchase certain assets. All capitalized terms used in this Assignment and not defined herein shall have the respective meanings ascribed to such terms in the Purchase Agreement;

B. Subject to the Purchase Agreement, Seller wishes to assign to Purchaser its rights in all FOSSL Technology IP (including the IP listed on Schedule 1.1(w)) (collectively, the "*Transferred Intellectual Property*") under the terms and conditions hereinafter set forth.

NOW, THEREFORE, Seller and Purchaser, in consideration of the mutual promises contained in this Intellectual Property Assignment and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound, agree as follows:

1. **Assignment of Transferred Intellectual Property.** Subject to the Hansen Agreements and the Philips Agreements, Seller hereby sells, transfers, conveys, assigns and sets over to Purchaser all of Seller's rights (including without limitation, intellectual property rights), title, and interests in and to the Transferred Intellectual Property, and any and all goodwill in connection therewith. This Assignment includes all of Seller's right, title and interest in, to and under the Transferred Assets that are patents and patent applications and all divisions, renewals, continuations and continuations-in-part thereof, and all patents of the United States which may be granted thereon and all reissues and extensions thereof (including, without limitation, Seller's rights to the proceeds thereof and Seller's rights to sue for past, present and future infringements), and all patent applications which may hereafter be filed for said patents and patent applications in any country or countries foreign to the United States, and all patents which may be granted for said patents and patent applications in any country or countries foreign to the United States hereby authorized (collectively, the "*Transferred Patents and Patent Applications*"), and requests the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to record Purchaser as the owner of such Transferred Patents and Patent Applications and to issue all Patents for said Transferred Patents and Patent Applications to be in the name of the said Purchaser, as Purchaser of Seller's rights in the Transferred Patents and Patent Applications, in accordance with the terms of this Assignment. This Assignment includes the right to claim priority based on the filing date of the Transferred Patents and Patent Applications under the International Convention for the Protection of Industrial Property, the

Patent Cooperation Treaty, the European Patent Conventions, and all other treaties of like purposes. The transferred rights include the right to collect any royalties, license fees, or other amounts related to the Transferred Intellectual Property owing from third parties, as well as the right to bring infringement or similar actions that may have accrued prior to this Assignment, subject to the third party rights in the Transferred Intellectual Property described in the Purchase Agreement, and to any licenses granted by Purchaser to Seller under the Transferred Intellectual Property pursuant to a license agreement executed by Seller and Purchaser concurrently with the Purchase Agreement (the "2014 License Agreement").

2. Miscellaneous Provisions.

2.1 Recordation. Seller authorizes the U.S. Patent and Trademark Office, the U.S. Copyright Office and any Official of any country or countries foreign to the United States whose duty it is to receive or register copyrights, patents, trademarks or applications therefore, to record Purchaser as the owner of Seller's rights in the Transferred Intellectual Property and to issue all registrations for said Transferred Intellectual Property, to be in the name of Purchaser, as Purchaser of Seller's rights in the Transferred Intellectual Property, in accordance with the terms of this Assignment and subject to any licenses granted by Purchaser to Seller under the Transferred Intellectual Property pursuant the 2014 License Agreement.

2.2 Severability. Should any term or provision of this Assignment be held to any extent unenforceable, invalid, or prohibited under law, then such provision shall be deemed restated to reflect the original intention of the Parties as nearly as possible in accordance with applicable law and the remainder of this Assignment. The application of such term or provision to persons, property, or circumstances other than those as to which it is invalid, unenforceable, or prohibited, shall not be affected by such invalidity, unenforceability, or prohibition, and each term and provision of this Assignment shall be valid and enforceable to the fullest extent permitted by law.

2.3 Interpretation. This Assignment has been freely negotiated and entered into by each Party. A Party's role in drafting this Assignment shall not be a basis for construing this Assignment in any manner against such Party.

2.4 Headings. Section headings are for reference only and shall not affect the interpretation of this Assignment.


2.5 Successors in Interest. This Assignment and all of the provisions in this Assignment shall be binding upon and inure to the benefit of the successors in interest and assigns of the Parties.

2.6 Applicable Law. This Assignment, each transaction entered into under this Assignment, and all matters arising out of or related to this Assignment shall be in all respects governed by, and construed and enforced in accordance with, the laws of the State of Illinois without giving effect to its rules relating to conflict of laws.


{Signature Page Follows}

IN WITNESS WHEREOF, Purchaser accepts this Assignment and Seller has caused this Assignment to be executed and delivered on its behalf as of the Effective Date.

LUNA INNOVATIONS INCORPORATED ("SELLER")

By 
Name: My E. Chung
Title: President + CEO

INTUITIVE SURGICAL OPERATIONS, INC. ("PURCHASER")

By 
Name: FRANK NGUYEN
Title: VP OF IP & LICENSING

SCHEDULE 1.1(w)
FOSSL Patents and Patent Applications

<i>Title</i>	<i>Appl. No./Patent No.</i>	<i>Appl. Date</i>	<i>Country</i>
Time-sheared OFDR for Vibration Tolerance and Measurement	2,590,790	12/13/2005	Canada
High Resolution Interferometric OFDR Beyond the Laser Coherence Length	7810547.5	7/18/2007	EP
Distributed Strain and Temperature Discrimination in Polarization Maintaining Fiber	7795875.9	6/7/2007	EP
High Accuracy Position Sensing w/ Multi-Core Fiber	12/874,901	9/2/2010	US
High Precision Wavelength Meas....of a Tunable Laser	12/735,813	8/19/2010	US
High Precision Wavelength Meas....of a Tunable Laser	9712064.6	8/20/2010	EP
High Precision Wavelength Meas....of a Tunable Laser	2010-547792	8/20/2010	JPO
Circular Fiber Rosettes for Strain Sensing	13/081,056	4/6/2011	US
Interferometric Measurement with X-talk Supp.	13/113,761	5/31/2011	US
Reducing Reflection at Term. of Optical Fiber...	13/222,577	8/31/2011	US
High Accuracy Position Sensing w/ Multi-Core Fiber	10817557.1	4/12/2012	EP
High Accuracy Position Sensing w/ Multi-Core Fiber	CN 201080041709.6	3/19/2012	China
High Accuracy Position Sensing w/ Multi-Core Fiber	2224/DELNP/2012	3/14/2012	India
High Accuracy Position Sensing w/ Multi-Core Fiber	2012115444	9/16/2010	Russia
High Accuracy Position Sensing w/ Multi-Core Fiber	BR112012008347.3	3/19/2012	Brazil
High Accuracy Position Sensing w/ Multi-Core Fiber	2012-529743	3/13/2012	JPO
High Accuracy Position Sensing w/ Multi-Core Fiber	W00201200968	9/16/2010	Indonesia
Circular Fiber Rosettes for Strain Sensing	11766631.3	10/16/2012	EP
Interferometric Measurement with X-talk Supp.	11790200.7	11/7/2012	EP

Registration of an Ext. Reference in OSS	11790271.8	11/8/2012	EP
Compensating for Sensor Motion in OFDR Measurements	PCT/US2012/067554	12/3/2012	PCT
Simultaneous Multiple Parameter Optical Measurements	61/803,181	3/19/2013	PROV
Reducing Reflection at Term. of Optical Fiber...	11822548.1	3/5/2013	EP
Compensating for Non-Ideal MC Opt. Fiber Structure	11825919.1	3/5/2013	EP
M&A for Measurement of Modal Characteristics of Multimode Fiber Using Rayleigh Scatter	61/803,187	3/19/2013	US
Comp. for Time Varying Phase Changes in Interferometric Measurements	2817631	5/17/2013	CA
M&A for Parament Meas w/...Chirped Fiber Bragg Grating...	61/834,526	6/13/2013	US
Segmented Calibration of Shape Sensing Optical Fiber	61/836,297	6/18/2013	US
Variable-Polarization... Via Beam Splitter Rotation	14/119,797	11/22/2013	US
Co-Registration of Cores in MC Optical FSS	14/126,536	12/16/2013	US
Embedded Optical Fiber Pressure Sensing Pad	61/896,916	10/29/2013	US
Variable-Polarization... Via Beam Splitter Rotation	12789675.1	12/12/2013	EP
Body Shape, Position, and Posture Recognition Suit with Multi-Core Optical Shape Sensing Fiber	61/899,966	11/5/2013	US
Static & Continuous Dispersion Correction in OFDR	PCT/US2013/077711	12/24/2013	PCT
Co-Registration of Cores in MC Optical FSS	12801232.5	12/16/2013	EP
F.O. Network Interrogation Device	TBD	TBD	EP
Time-sheared OFDR for Vibration Tolerance and Measurement	4,718,557		JP
Polarization Diversity Detection w/o a Polarizing Beam Splitter	7,379,168		US
Compensating for Time Varying Phase changes in Interferometric Measurements	7,948,633		US
Compensating for Time Varying Phase changes in Interf. Meas.	8,004,686		US
Identifying Optical Fiber Segments and Determining Characteristics of an Optical Device under Test Based on Fiber Segment Scatter Pattern Data	7,440,087		US
Calculation of Birefringence in a Waveguide Based on Rayleigh Scatter	7,330,245		US
A&M for the Complete Characterization of Optical Devices...	6,856,400		US
High Resolution Interferometric OFDR beyond the Laser Coherence Length	7,515,276		US
A&M for the Complete Characterization of Optical Devices...	7,042,573		US

Distributed Strain And Temp. Discrimination in Unaltered Polarization Maintaining Fiber	7,538,883		US
A&M for Correcting Errors Generated by a Laser with Non-Ideal Tuning Characteristics	6,900,897		US
Fiber-Optic A&M for Making Simultaneous Multiple Parameter Measurements	6,898,337		US
Demodulation System for Fiber-Optic Sensors	7,561,276		US
Method and Apparatus for Calibrating Measurement Equipment	7,633,607		US
Reg. of an Ext. Ref. for Parameter Measurement in an OSS	8,400,620		US
Compensating for Non-Ideal MC Opt. Fiber Structure	8,531,655		US
Fiber Optic Position and/or Shape Sensing based on Rayleigh Scatter	7,772,541		US
Fiber Optic Position and Shape Sensing Device and Method Relating Thereto	7,781,724		US
Calculation of Birefringence in a Waveguide Based on Rayleigh Scatter	1,869,511		GB
Calculation of Birefringence in a Waveguide Based on Rayleigh Scatter	6,737,600		FR
Calculation of Birefringence in a Waveguide Based on Rayleigh Scatter	6,737,600		DE
Calculation of Birefringence in a Waveguide Based on Rayleigh Scatter	6,737,600		TY
Comp. for Time Varying Phase Changes in Interferometric Measurements	5,285,669		JP
Comp. for Time Varying Phase Changes in Interferometric Measurements	602005040592.5		DE
Comp. for Time Varying Phase Changes in Interferometric Measurements	2,397,813		FR
Comp. for Time Varying Phase Changes in Interferometric Measurements	2,397,813		GB
Comp. for Time Varying Phase Changes in Interferometric Measurements	2,397,813		BE
Compensating for Time Varying Phase Changes in Interferometric Measurements	05853828.1		EP
Heterodyne Optical Spectrum Analyzer	7,388,673		US
Interferometric Sensors Utilizing Bulk Sensing Mediums...	6,671,055		US
Optical Waveguide Sensor Arrangement having Guided Modes, Non Guided Modes Grating Coupler	5,641,956		US
Optical Fiber Long Period Sensor Having A Reactive Coating	5,864,641		US
Optical Sensor Activation Device	6,021,240		US
Process for preparing an optical fiber sensor with enhanced sensitivity	6,035,082		US
Optical Waveguide Sensors Having High Refractive Index Sensitivity	6,366,722		US
Flexible Fiber Optic Microbend Device, with Interlocking Flexible Fibers...	6,429,421		US