

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5597750

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
MARK FROGGATT	12/19/2017
DAWN GIFFORD	12/19/2017
ERIC SANBORN	12/19/2017
ALEXANDER K. SANG	12/19/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	INTUITIVE SURGICAL OPERATIONS, INC.
<b>Street Address:</b>	1020 KIFER ROAD
<b>City:</b>	SUNNYVALE
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	94086
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	16474531
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<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>Email:</b>	request@slwip.com
<b>Correspondent Name:</b>	INTUITIVE SURGICAL OPERATIONS, INC.
<b>Address Line 1:</b>	1020 KIFER ROAD
<b>Address Line 4:</b>	SUNNYVALE, CALIFORNIA 94086
<b>ATTORNEY DOCKET NUMBER:</b>	ISRG09260/US
<b>NAME OF SUBMITTER:</b>	JONATHAN FERGUSON
<b>SIGNATURE:</b>	/JONATHAN FERGUSON/
<b>DATE SIGNED:</b>	06/28/2019
This document serves as an Oath/Declaration (37 CFR 1.63).	
<b>Total Attachments: 2</b>	
source=3948-173US1_ASSIGNMENT_FILED_2019-06-28#page1.tif	
source=3948-173US1_ASSIGNMENT_FILED_2019-06-28#page2.tif	

**COMBINED DECLARATION AND ASSIGNMENT  
FOR UTILITY PATENT AND DESIGN PATENT APPLICATIONS**

**DECLARATION**

In accordance with 35 U.S.C. § 115(b), as a below named inventor, I hereby declare that I believe I am the original inventor or an original joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

*METHODS AND APPARATUS FOR DETERMINING SHAPE PARAMETER(S)  
USING A SENSING FIBER HAVING A SINGLE CORE WITH MULTIPLE LIGHT  
PROPAGATING MODES*

the application of which is attached hereto, or if the following is checked—

☐ was filed on \_\_\_\_\_ as United States Application Number \_\_\_\_\_  
or PCT International Application Number \_\_\_\_\_, and was  
amended on \_\_\_\_\_ (if applicable).

The above-identified application was made or authorized to be made by me.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. § 1001 by fine or imprisonment of not more than 5 years, or both. I declare (or certify, verify, or state) under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. This declaration is executed on the date shown in the EXECUTION section below.

**ASSIGNMENT**

FOR GOOD AND VALUABLE CONSIDERATION, the adequacy and receipt of which is hereby acknowledged by the undersigned inventor(s) (ASSIGNOR(S)), the undersigned ASSIGNOR hereby assigns, and agrees to assign, to the maximum extent permitted by applicable law, to:

Intuitive Surgical Operations, Inc.  
1020 Kifer Road  
Sunnyvale CA 94086

(ASSIGNEE(S)), all present and future-arising right, title, and interest world-wide in (a) the invention(s) described in the above-identified application; (b) the above-identified application, and all subsequent applications based thereon, in the United States of America, in all foreign countries and regions, and under all international agreements to which the United States of America adheres (e.g., Patent Cooperation Treaty, Hague System for the International Registration of Industrial Designs), including any and all regular, continuation, continuation-in-part, divisional, substitute, and reissue applications; and (c) all resulting patents based thereon, including without limitation patents resulting from routine examination, reexamination, supplemental examination, inter partes review, ex parte review, post grant review, utility model application, or other procedures, for the full term or terms for which these patents are granted,

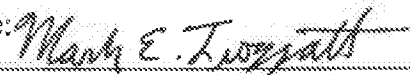
together with the right of priority under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres.

The ASSIGNOR agrees to (1) execute, verify, and deliver all papers necessary in connection with any of said applications, patents, or related procedures; (2) execute separate assignments in connection with said applications as the or each ASSIGNEE may deem necessary or expedient; (3) execute, verify, and deliver all papers necessary in connection with any legal proceeding concerning said applications and patents; and (4) cooperate with the or each ASSIGNEE in every way possible in obtaining and producing evidence and proceeding with said legal proceeding.

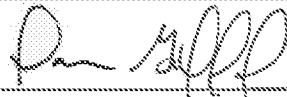
This agreement supplements any preceding agreement concerning the same subject matter.

### EXECUTION


Hereby executed by the undersigned on the date shown:

Signature: 	Date: Dec 19, 2017
Legal name: Mark FROGGATT	

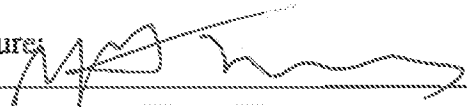
  

Signature: 	Date: 12/19/17
Legal name: Dawn GIFFORD	

Signature: 	Date: 12/19/17
Legal name: Eric SANBORN	

Signature: 	Date: 12/19/2017
Legal name: Alexander K. SANG	