



# Investor Presentation

TSX: TMD | Nasdaq: TMDI

January 2019

# Forward-looking Statements

This presentation contains "forward-looking statements" which reflect the current expectations of management of the Company's future growth, results of operations, revenue projections, technological development and implementation, performance and business prospects, opportunities, and illustrations and prototypes of the SPORT Surgical Systems. Wherever possible, words such as "may", "would", "could", "will", "anticipate", "believe", "plan", "expect", "intend", "estimate", "project" and similar expressions have been used to identify these forward-looking statements. These statements reflect management's current beliefs with respect to future events and are based on information currently available to management. Forward-looking statements involve significant risks, uncertainties and assumptions. Many factors could cause the Company's actual results, performance, achievements or technological development and implementation to be materially different from any future results, performance, achievements or technological development and implementation that may be expressed or implied by such forward-looking statements, including, without limitation, those listed in the "Risk Factors" section of the Company's Annual Information Form in respect of the fiscal year ended December 31, 2017 and other information contained in the Company's public filings (which may be viewed at [www.sedar.com](http://www.sedar.com)). Information contained in this presentation is qualified in its entirety by such public filings. Should one or more of these risks or uncertainties materialize, or should assumptions underlying the forward looking statements prove incorrect, actual results, performance or achievements may vary materially from those expressed or implied by the forward-looking statements contained in this presentation. These factors should be considered carefully and prospective investors should not place undue reliance on the forward-looking statements. Although the forward-looking statements contained in the presentation are based upon what management currently believes to be reasonable assumptions, the Company cannot assure prospective investors that actual results, performance or achievements will be consistent with these forward-looking statements. This presentation does not constitute an offer to sell any class of securities of the Company in any jurisdiction. Data presented on slides 7 and 8 are estimates of the upper limit of the potential addressable U.S. market for revenue from capital equipment and disposables based on a number of management assumptions that are not set forth here. There is no assurance as to the quantities to be sold or the selling price indicated, or whether hospitals will purchase at the assumed prices. The Company does not forecast what portion of the total addressable market it will be able to capture. On slide 9, the Company assumes that the information presented is accurate but has not verified the information.



# Titan Medical Overview

Designer and developer of the **SPORT Surgical System**, a versatile single-port platform that is intended to address an underserved segment of the multibillion-dollar\* market for abdominal surgeries performed using robotic technology.

Designed for improved clinical performance,  
ease of use, operating room efficiency,  
and hospital economics.



\*Robotically Assisted Surgical (RAS) Devices market to grow at 11.7% CAGR and reach \$5.3 billion in 2021, RAS Devices Market Report, Meddevicetracker Group. [PG 3](#)

# Leadership Team

**David J. McNally**  
President, CEO & Director

Founder, President, CEO & Chairman Domain Surgical Inc.; developer, manufacturer, marketer of advanced energy surgical platform, merged with OmniGuide in 2016. Co-founder, President & CEO ZEVEX International Inc. (Nasdaq: ZVXI); developer, manufacturer, marketer of award-winning medical devices, acquired by MOOG Inc. in 2007. Bachelor of Science in mechanical engineering from Lafayette College, MBA from the University of Utah, co-inventor on 40+ U.S. and international patents.

**Stephen Randall, CPA, CGA**  
CFO & Director

30+ years of executive experience in established and start-up companies including accounting, finance, capital markets, tax planning, compliance, IT management, mergers & acquisitions and operations. Bachelor of Arts in political science from the University of Western Ontario, Commerce Degree from the University of Windsor.

**Perry Genova, PhD**  
SVP of R&D

Expert in in medical device product development including surgical robotics, author of 32 peer-reviewed papers, inventor of 30 U.S. Patents + 24 patents pending. PhD in biomedical engineering from the University of North Carolina at Chapel Hill, Bachelor of Science in electrical engineering from the University of North Carolina at Charlotte.

**Curtis Jensen**  
VP of Quality & Reg. Affairs

20+ years of experience leading quality and regulatory affairs teams at established and start-up U.S. companies to achieve quality systems compliance, 510(k) clearances, and CE Mark approvals. Master of Science in applied mathematics from Johns Hopkins University, Bachelor of Science in electrical engineering from Utah State University.

**Sachin Sankholkar**  
VP of Marketing

20+ years of advanced medical device marketing experience, including 15 years at Intuitive Surgical Inc. developing robotic surgeon network and procedural expertise in multiple subspecialties. Master of Science in biomedical engineering from Drexel University, MBA from the University of Southern California.

**Chris Seibert**  
VP of Business Development

12+ years of advanced medical device sales and management experience, including 10 years at Intuitive Surgical Inc. and Stereotaxis Inc. with IDN/GPO sales channel expertise and C-level access and network. Bachelor of Arts from the University of Alabama, Master of Arts in human relations from the University of Oklahoma, MBA from the University of South Alabama.



# Evolution of Surgical Care

## Open Surgery

- Open surgery offers broad application
- Requires significant hospital stay and recovery time
- Risk of adverse events

## Minimally Invasive Surgery

- Minimally Invasive Surgery (MIS) has been a growing trend over the past 25 years
- Reduced hospitalization time
- Reduced risk of adverse events
- Requires highly skilled surgeons

## Multi-Port Robotic Surgery

- Robotic surgery further expands upon the benefits of MIS
- Global robotic procedures have grown from 1,000 procedures in 2000 to 877,000\* in 2017
- **Technology remains expensive with procedural and operational limitations**

## Single-Port Robotic Surgery

- Application of da Vinci® Single-Site in GYN and general surgery shows early promise
- da Vinci SP® single port robotic system received FDA clearance for urology in 2018
- **Robotic visualization, precision and dexterity with triangulation delivered through a single incision – such as SPORT – the next frontier!**

\* Source: Intuitive Surgical Inc. press release to announce preliminary fourth quarter and full year 2017 results



# Today's Robotic Surgery Environment

Robotic technology was introduced to mitigate the risks of MIS, reduce variations in procedural efficiency and improve consistency of patient outcomes.

## Benefits

- + Increased Dexterity
- + Improved Visualization (3D)
- + Improved Ergonomics

## Challenges

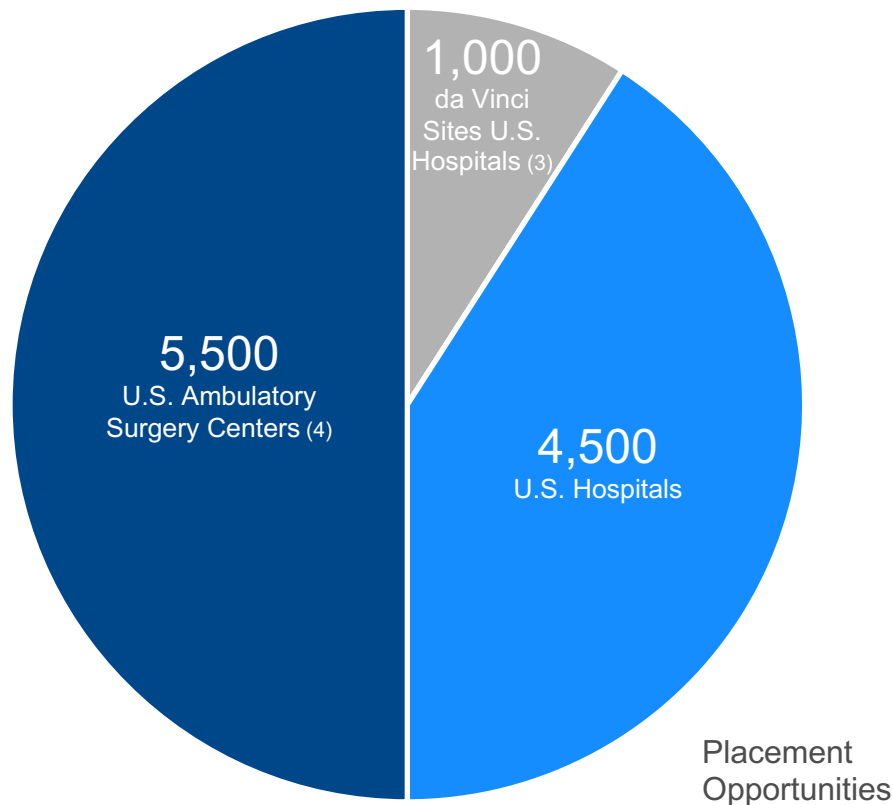
- High Cost of Entry
- Large Physical Footprint
- High Level of Training
- Increased Cost For Each Procedure
- Reduced Operational Efficiency (long setup time)
- Low ROI for Hospitals
- Limited Procedural Capability



# \$12B+

## U.S. Capital Revenue Opportunity

10,000 New Placement  
Opportunities<sup>(1,2)</sup>



(1) *Potential* addressable market opportunity based on estimate of one system per hospital at \$1.25M per system, plus accessories

(2) Registered U.S. Hospitals Source: <http://www.aha.org/research/rc/stat-studies/fast-facts.shtml>

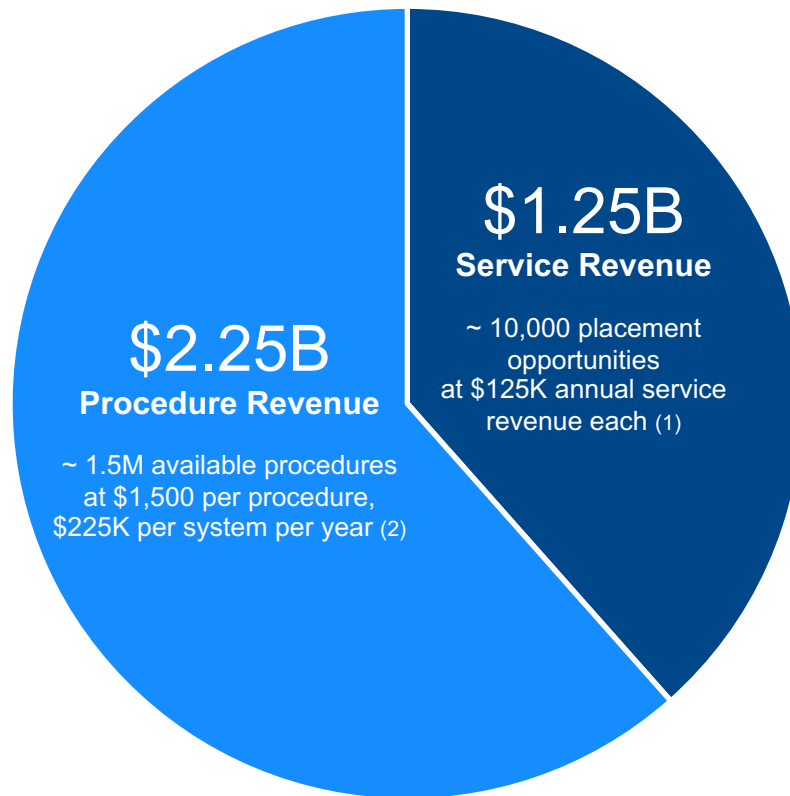
(3) Intuitive Surgical da Vinci U.S. Hospitals Source: <http://davincisurgeonlocator.com/>

(4) Ambulatory Surgery Centers Source: <http://www.ascassociation.org/advancingsurgicalcare/whatisanasc/numberofascspersstate>



# \$3.5B U.S. Annual Recurring Revenue Opportunity

For Service and  
Consumables



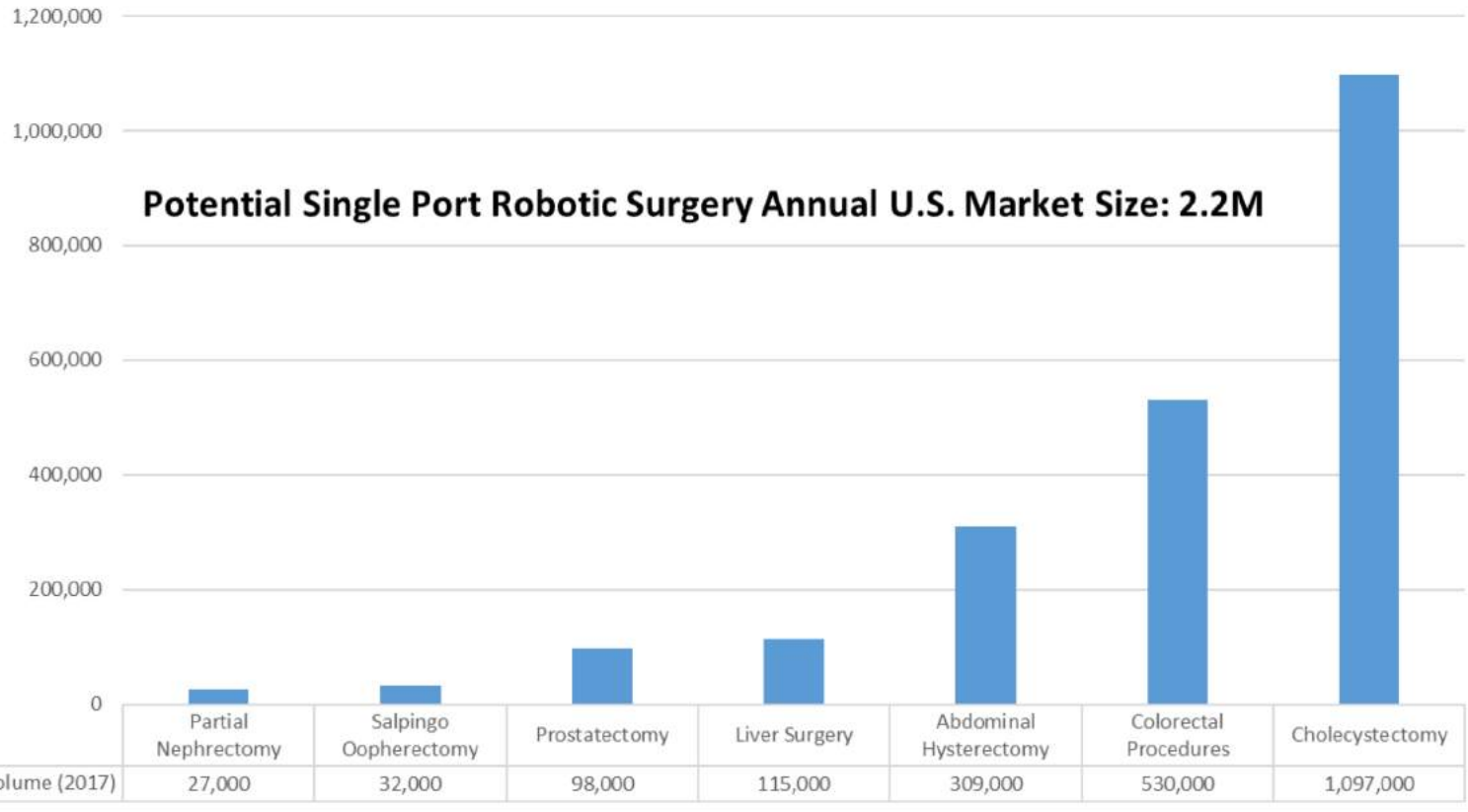
(1) *Potential* service revenue based on projected \$125,000 of annual service revenue per system after year 1

(2) *Potential* procedure revenue based on estimated \$1,500 per procedure revenue, assuming 150 procedures per system per year





## Projected Annual U.S. Procedure Volume (2017)



# Initial U.S Target: Gynecologic Surgery

Potential addressable annual market opportunity \$500M+ in U.S. alone<sup>1</sup>

- Abdominal Hysterectomy: 309,000 procedures per year in U.S.<sup>2</sup>
- Salpingo Oophorectomy: 32,000 procedures per year in U.S.<sup>2</sup>
- Endometriosis:
  - Underdiagnosed, affects about 5 million U.S. women<sup>3</sup>
  - Most common in women in their 30s and 40s
  - Surgery usually chosen for severe symptoms
  - Typically performed in outpatient surgery setting

(1) Based on *potential* of 341,000 procedures per year in the U.S. and *estimated* revenue of \$1,500 per procedure

(2) Source: Life Sciences Intelligence Meddevicetracker Report MDT 17015, published October 2017

(3) Source: A Fact Sheet From the Office on Women's Health, Department of Health & Human Services, USA, [www.womenshealth.gov](http://www.womenshealth.gov)



# System Overview

- Versatile single-port robotic surgery solution
- Small OR footprint
- Designed to overcome multi-port robotic surgery limitations
- Engineered for performance, efficiency and cost-effectiveness
- Expected to provide access to underserved market segments, such as ambulatory surgery centers



# Workstation

- Open, unobtrusive 3D high-definition display platform

- Multi-configurable elbow rest and foot pedal positioning

- Easily maneuverable with swiveling easy-gliding coasters



- Integrated software for simulation training (in collaboration with Mimic Technologies, Inc.)

- Natural multi-articulated handle interface

- Ergonomically focused design

# Patient Cart

- Easy to load and unload instruments through the camera insertion tube

- Single-port enables swift multi-quadrant positioning

- Minimal cable management in OR

- Single-arm configuration with no external moving parts facilitates simple setup and assistant-friendly surgery

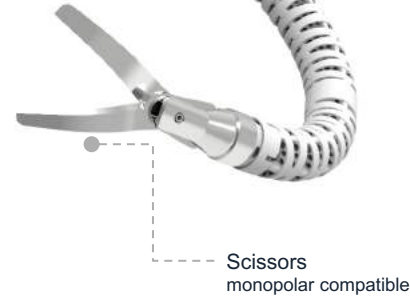
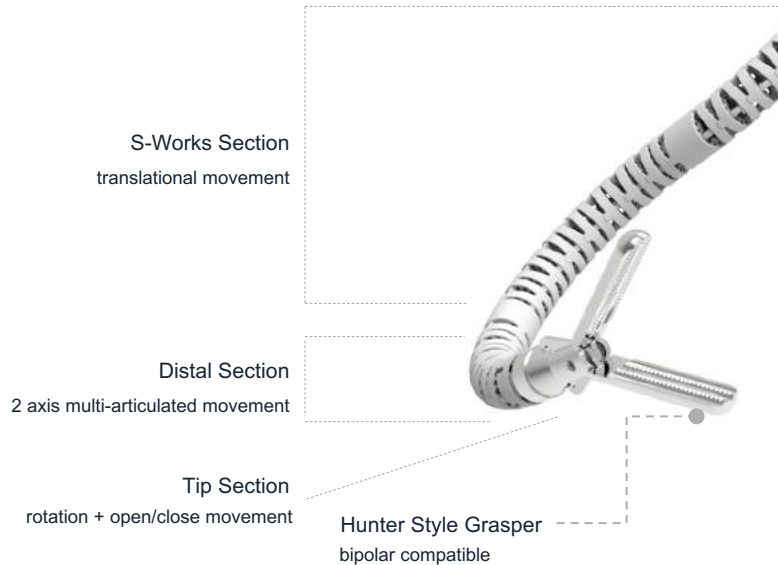
Instruments and 3D high-definition camera delivered through a camera insertion tube of 25 millimeter diameter

- Compact, rollers enable mobility to maneuver and position



# Multi-Articulated Instruments

- Variety of multi-use instruments with single patient use end effectors for grasping, suturing, cutting and coagulation



Dissector  
bipolar compatible



Hook  
monopolar compatible



Needle Driver



Traditional Grasper



- Open architecture for adaptation of future end effectors and functionality



# Technology Differentiation

Engineered for Simplicity and Efficiency



## Single-Incision

With a single incision made around the umbilicus, the result can be near-scarless surgery



## Small Footprint

Enhanced mobility and ease-of-use leads to quicker deployment in multiple ORs and higher utilization



## Multi-Articulating

Single-use end-effectors on reusable multi-articulating instrument arms result in optimal and economical device performance in every procedure



## Open Display

3D high-definition display offers the perfect balance of surgical immersion and situational awareness in the OR



## Ergonomic Workstation

Highly ergonomic workstation with natural handle interface enables comfortable surgical posture, even during long procedures



## Purposeful Design

Designed from the ground up to improve:

**Clinical Capabilities**

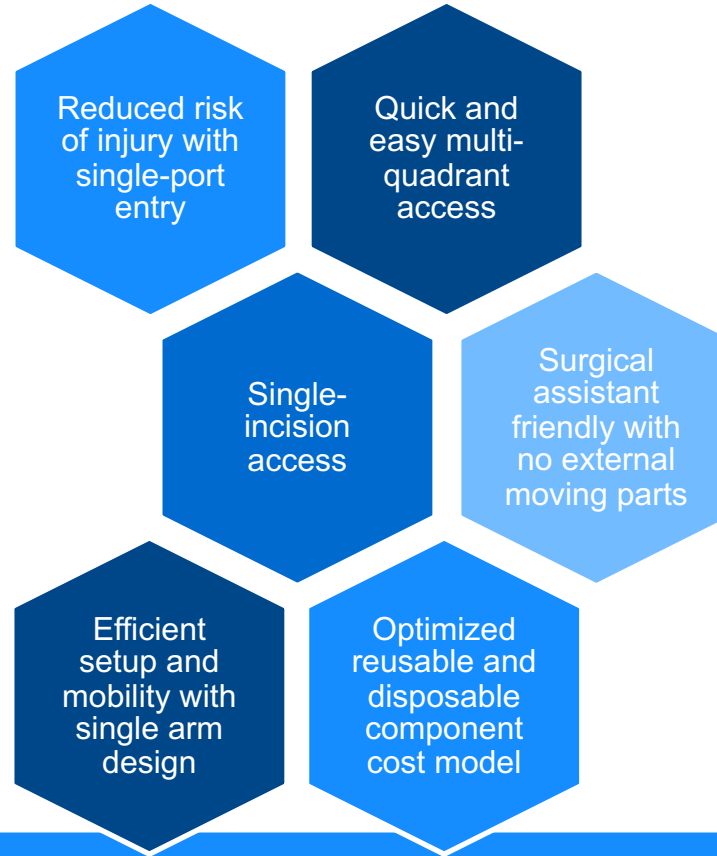
**OR Efficiency**

**Hospital Economics**



Single-Incision  
Surgery + Enhanced  
Robotic Technology

# Optimal Patient Care



SPORT Surgical System is designed to provide surgeons with multi-articulated instruments in a triangulated configuration through single-port access to the body.





# Intellectual Property

The SPORT Surgical System is a unique single-incision robotic system that is differentiated by its patented multi-articulating instruments, user interface and ergonomic features

August 2018 USPTO issuance relates to “System and Apparatus for Insertion of an Instrument Into a Body Cavity for Performing a Surgical Procedure”, facilitating robotic surgery

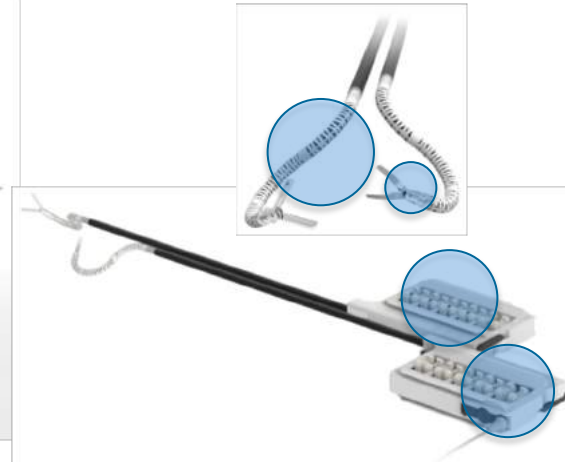
29

U.S. & International  
Patents Issued

73

Applications Pending

Areas of the SPORT Surgical System covered by patents or pending applications:



# 2017-2018 Accomplishments

- Recruited qualified VP of Research & Development, VP of Quality & Regulatory Affairs
- Assessed product development program, established and met all 2017 and 2018 milestones to-date
- Expanded patent portfolio
- Established Centers of Excellence in U.S. & Europe
  - Florida Hospital Nicholson Center in Orlando
  - Columbia University Medical Center in New York City
  - Institut Hospitalo-Universitaire de Strasbourg, France
- Verified system performance with 45 preclinical studies at Centers of Excellence
- Identified finite set of product improvements required for best-in-class performance
- Clarified preclinical and human data requirements for FDA 510(k) and CE Mark
- Secured USD \$70M in financing through series of Canadian and U.S. offerings, including a U.S. surgeon-led private placement and a recent simultaneous Canadian public/U.S. institutional raise
- Achieved Nasdaq listing in June 2018



# 45 Procedures Performed to Date

(live porcine unless otherwise indicated)

- GYN and GYN-ONC (8 procedures at Columbia University and Florida Hospital):
  - Radical Hysterectomy with Bilateral Salpingo Oophorectomy and Bilateral Pelvic / Para-Aortic Node Dissection
  - Simple Hysterectomy with Bilateral Salpingo Oophorectomy and Bilateral Pelvic Node Dissection
  - Simple Hysterectomy with Bilateral Salpingo Oophorectomy
- Urology (19 procedures at IHU Strasbourg and Florida Hospital):
  - Hemi-Nephrectomy and Partial Nephrectomy
  - Prostatectomy (Human Cadaver)
  - Pyeloplasty
  - Ureteral-Bladder Anastomosis
- General Surgery (14 procedures at IHU Strasbourg and Florida Hospital):
  - Cholecystectomy (1 Human Cadaver, 5 Live Porcine)
  - Nissen Fundoplication (1 Human Cadaver, 3 Live Porcine)
  - Esophagectomy (Human Cadaver)
  - Gastrectomy
  - Splenectomy
- Colorectal (4 procedures at Florida Hospital):
  - Colectomy
  - Low Anterior Resection



# Peer-reviewed Abstracts to Date

SPORT single-port  
robotic surgery is  
feasible &  
repeatable!

- 1. Multi-disciplinary applications of a new robotic platform** by Barbara Seeliger, MD and Lee Swanstrom, MD (IHU Strasbourg)  
Accepted and presented at Society of American Gastrointestinal and Endoscopic Surgeons Meeting, Seattle, WA, April 2018
- 2. Single-port prostatectomy using SPORT Surgical System** by Eric Barret, MD (IMM, France)  
Accepted and presented at EAU Section of Urology Technology Meeting, Modena, Italy, May 2018
- 3. Multispecialty single port robotic technology applied in the live animal model: proof of concept** by Travis Rogers, MD, Eduardo Parra Davila, MD, Vipul Patel, MD (all from Florida Hospital), Ricardo Estape, MD (South Miami GOG) and Armando Melani, MD (IRCAD Brazil)  
Accepted and presented as a poster at Society of Robotic Surgery Meeting, Stockholm, Sweden, June 2018
- 4. Feasibility of single-port partial nephrectomy using SPORT surgical system** by Eric Barret, MD (IMM, France)  
Accepted and presented as a poster at Society of Robotic Surgery Meeting, Stockholm, Sweden, June 2018
- 5. Single-port robotic partial and hemi nephrectomy using a novel single port robotic platform** by Sebastien Crouzet, MD (University of Lyon, France) and Barbara Seeliger, MD (IHU Strasbourg)  
Accepted and presented at EAU Robotic Urology Section Meeting, Marseille, France, September 2018
- 6. Reverse Objective Structured Assessment of Technical Skills (Reverse-OSATS) as a means of measuring the capability of the Titan Medical SPORT Surgical System on core surgical principles** by Chetna Arora, MD, Arnold P. Advincula, MD (both from Columbia University Medical Center) and William B. Burke, MD (Stony Brook Cancer Center)  
Accepted and presented at Society of European Robotic Gynecologic Surgeons Meeting, Milan, Italy, September 2018
- 7. Multispecialty single port robotic technology applied in the live animal model: proof of concept** by Travis Rogers, MD, Eduardo Parra Davila, MD, Vipul Patel, MD (all from Florida Hospital), Ricardo Estape, MD (South Miami GOG) and Armando Melani, MD (IRCAD Brazil)  
Accepted and presented at World Congress of Endourology Meeting, Paris, France, September 2018
- 8. Feasibility of single-port partial nephrectomy using SPORT surgical system** by Eric Barret, MD (IMM, France)  
Accepted and presented at World Congress of Endourology Meeting, Paris, France, September 2018
- 9. Reverse Objective Structured Assessment of Technical Skills (Reverse-OSATS) as a means of measuring the capability of the Titan Medical SPORT Surgical System on core surgical principles** by Chetna Arora, MD, Arnold P. Advincula, MD (both from Columbia University Medical Center) and William B. Burke, MD (Stony Brook Cancer Center)  
Accepted and presented at American Association of Gynecologic Laparoscopists Global Congress, Las Vegas, NV, November 2018



# Plan for Commercialization\*

**2018** ➤

Optimize handpieces, camera, instruments and software for best-in-class performance, produce peer-reviewed publications, plan regulatory submittals, complete engineering confidence build

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**2019** ➤

Design freeze, human factors evaluation, conduct preclinical and confirmatory human studies for regulatory data, submit Technical File for CE Mark to Notified Body, FDA 510(k) application

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**2020** ➤

Anticipated regulatory clearance, launch in Europe and US

\*Based on management's current estimates.





# Summary

- Targeting underserved segment of multibillion-dollar global robotic surgery market
- Highly versatile, differentiated advanced single-port platform
- Designed for improved clinical performance, ease of use, operating room efficiency and hospital economics
- Potential benefits to patients, surgeons and hospitals versus competitive offerings
- System performance verified in preclinical studies with data presented at clinical conferences
- Attractive capital and recurring revenue model
- Experienced management team with record of success



Thank You

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