TITAN MEDICAL™

Annual and Special Meeting Update

TSX: TMD | Nasdaq: TMDI

May 29, 2019

Forward-looking Statements

This presentation contains “forward-looking information” and "forward-looking statements" which relate to future events or future performance and reflect the current expectations and assumptions of management of the Company's future growth, results of operations, 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”, “predict”, “target”, ”potential”, 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, 2018 and other information contained in the Company’s public filings (which may be viewed at 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 as of the date of this presentation, 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. There is no assurance as to whether hospitals will purchase the Company’s products and services at assumed prices. The Company does not forecast what portion of the total addressable market it will be able to capture.

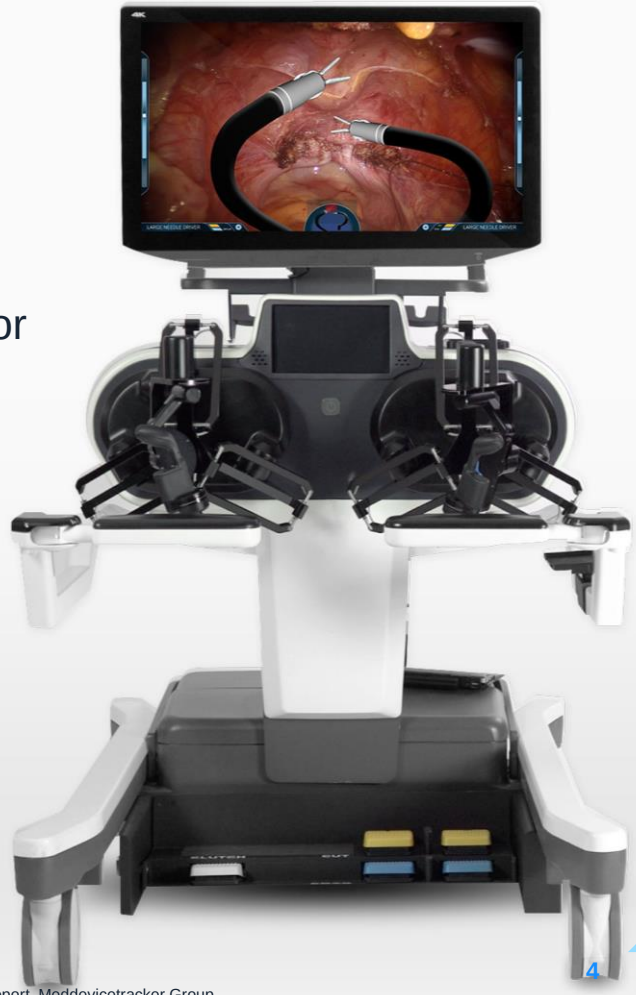
Agenda

- Overview
- Investment Highlights
- Product Update
- Intellectual Property
- Initial Target Market
- Milestone Update
- Commercial Timeline

Titan Medical Overview

Designer and developer of a versatile single-port system intended to address a growing multibillion-dollar market* for abdominal surgeries performed using robotic technology.

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



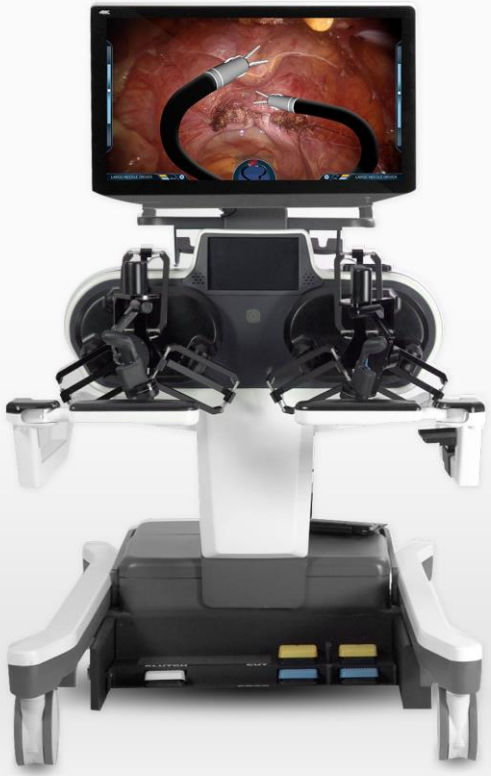
*Robotically Assisted Surgical (RAS) Devices market to grow at 11.7% CAGR for the next 5 years and reach $5.3 billion in 2021, RAS Devices Market Report, Meddevicetracker Group.

Investment Highlights

Novel Clinical Paradigm	✓ Multi-articulated triangulation through a single incision
Promising Physician Feedback	✓ Tested by U.S. and EU surgeons from 4 surgical disciplines ✓ 45 preclinical studies ✓ 9 peer-reviewed abstract presentations and 1 published manuscript
Robust IP Portfolio	✓ 100+ global patents and applications
Disruptive Business Model	✓ Projected savings on capital equipment, service and procedure costs ✓ Recurring revenue model based on consumable components
Pre-commercial Momentum	✓ U.S. launch planned in 2020 using direct sales strategy
Favorable Market Dynamics	✓ Large, underpenetrated market due to size, complexity and costs associated with existing robotic surgical systems ✓ Applicable to multiple minimally invasive procedures

System Overview

- Versatile single-port robotic surgery solution
- Smaller OR footprint than multiport systems
- 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

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

Natural multi-articulated handle interface

Open, unobtrusive 3D high-definition display platform on a 4K monitor

Ergonomically focused design

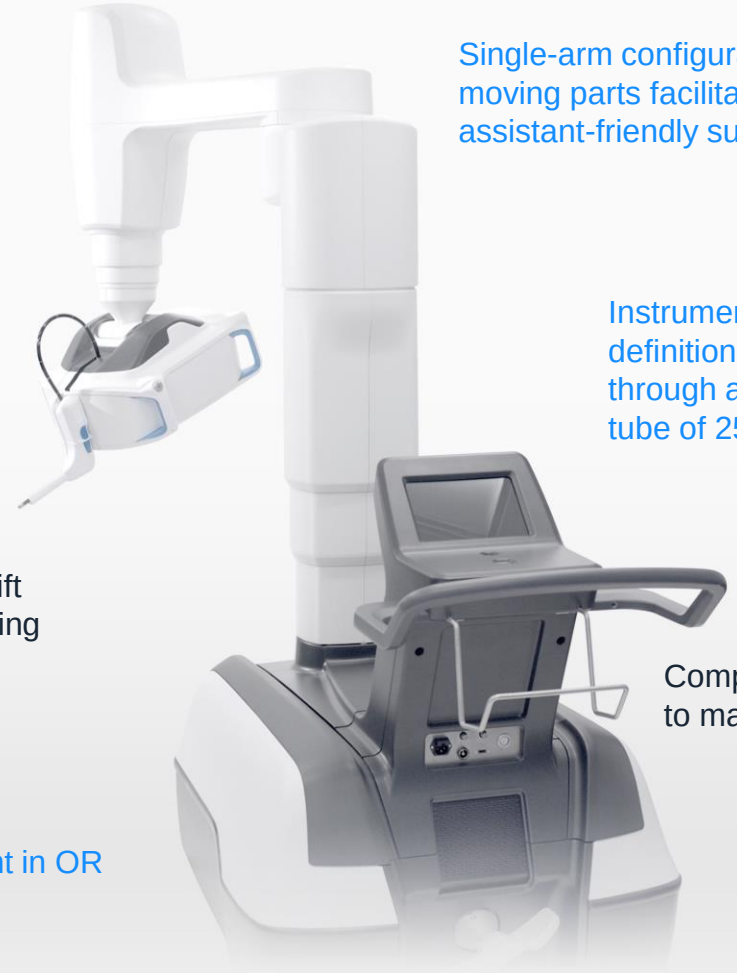
Multi-configurable elbow rest and foot pedal positioning

Easily maneuverable with swiveling easy-gliding coasters

Patient Cart

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

Easy to load and unload instruments through a detachable camera insertion tube



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

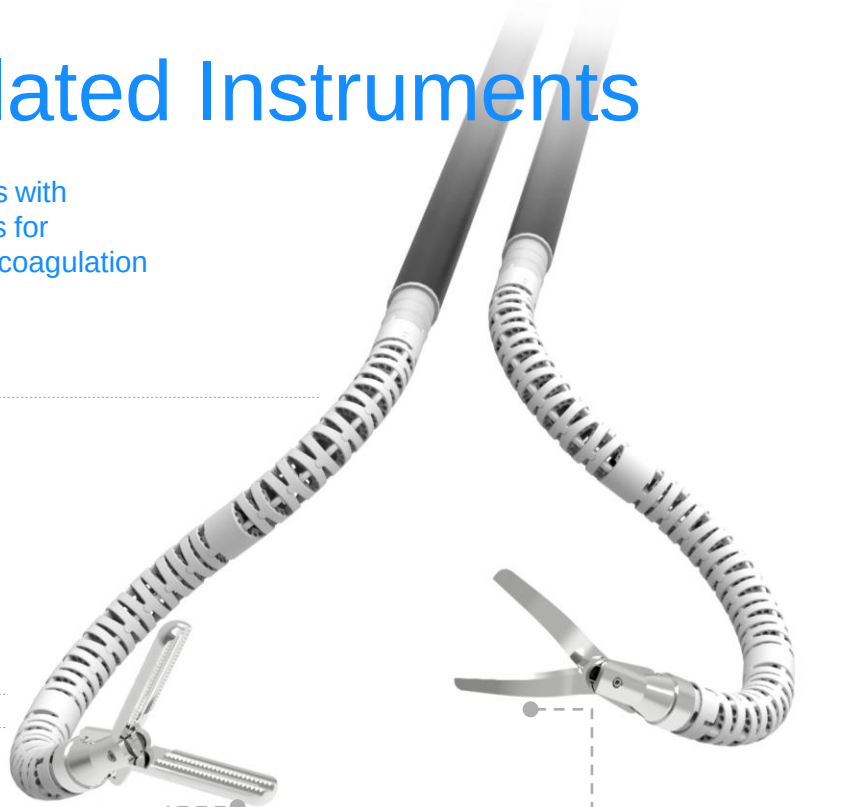
Single-port enables swift multi-quadrant positioning

Compact, rollers enable mobility to maneuver and position

Minimal cable management in OR

Multi-Articulated Instruments

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



S-Works Section
translational movement

Distal Section
2 axis multi-articulated movement

Tip Section
rotation + open/close movement

Hunter Style Grasper
bipolar compatible

Scissors
monopolar compatible

Dissector
bipolar compatible

Hook
monopolar compatible

Needle Driver

Traditional Grasper

Open architecture for adaptation of future end effectors and functionality

Intellectual Property

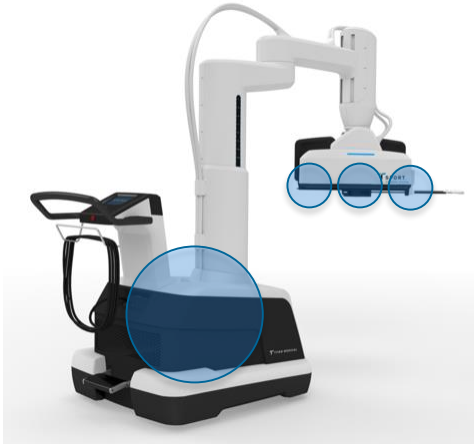
Unique single-port robotic system that is differentiated by its patented and patent-pending multi-articulating instruments, user interface and ergonomic features.

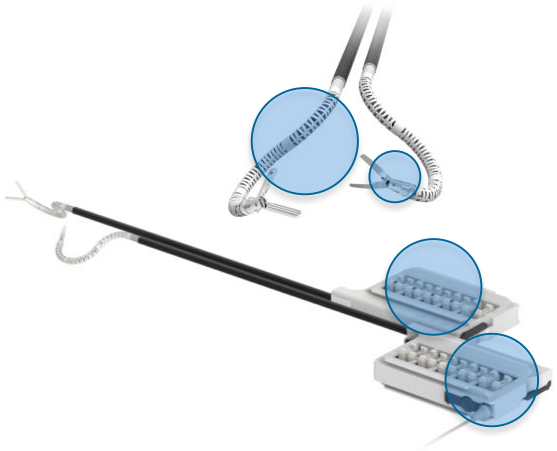
Differentiated and innovative design provides a strong position on freedom to operate.

35 U.S. & International Patents Issued

73 Applications Pending

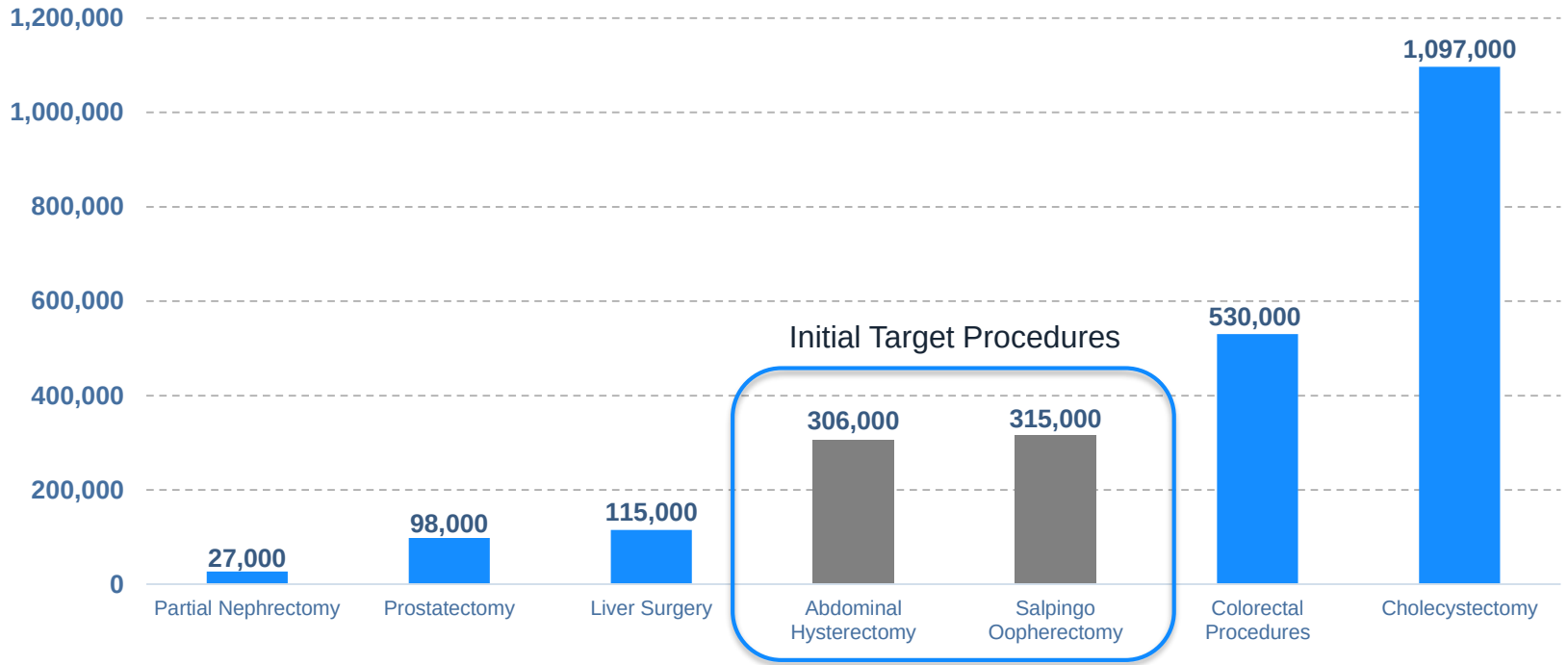
Areas of the single-port system covered by patents or pending applications:





Potential Procedures for Single-port Surgery

Projected 2018 U.S. Procedure Volume (based on most recently-published research)*



*Source: Life Sciences Intelligence Meddevicetracker Report MDT 17015, published October 2017 with annual projections for 2018

Initial U.S. Target: Benign Gynecologic Surgery

- Rationale:
  - Potential to reduce trauma and scarring, and offers possibility of faster recovery for an engaged patient population
  - Ability to produce positive patient outcomes in relatively low-risk benign procedures
  - Viable alternative to other single-port approaches based on gynecologic surgeon feedback from preclinical studies
  - Attractive procedure volumes performed in outpatient as well as inpatient settings, favoring smaller footprint and lower-cost model
  - Clarity of regulatory pathway
  - With U.S. focus, ability to efficiently provide comprehensive product training and support to facilitate early product adoption and consistent, excellent outcomes

Initial U.S. Target: Benign Gynecologic Surgery

Potential addressable annual market opportunity $900M+ in U.S. alone[1]

- Abdominal Hysterectomy: 306,000 procedures per year in U.S.[2]
- Salpingo-Oophorectomy and Oophorectomy: 315,000 procedures per year in U.S.[2]
- Endometriosis[3]:
  - Underdiagnosed, may affect as many as 6.5 million U.S. women
  - Most common in women in their 30s and 40s
  - Surgery usually chosen for severe symptoms
  - Some surgeries can be performed in outpatient surgery setting

(1) Based on *potential* of 621,000 procedures per year in the U.S. and management's estimation of revenue of $1,500 per procedure

(2) Source: Life Science Intelligence Report LSI-PV-US173SU, published November 2017 with annual projections for 2018

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

2019 Milestone Update

First Quarter:

- ✓ Announced completion of Engineering Confidence Build
- ✓ Announced publication of first peer-reviewed manuscript in Surgical Endoscopy
- ✓ Documented results of confidence build unit testing and implemented design improvements
- ✓ Began planning preliminary audit of quality system by European Notified Body

Second Quarter:

- ✓ Updated system design and related hardware and software documentation
- ✓ Initiate capital equipment design freeze
- Initiate preclinical live animal (swine) and cadaver surgery studies under GLP protocols
- Verify production system operation with clinical experts under rigorous formal human factors evaluation under simulated robotic manipulation exercises

2019 Milestone Update (continued)

Third Quarter:

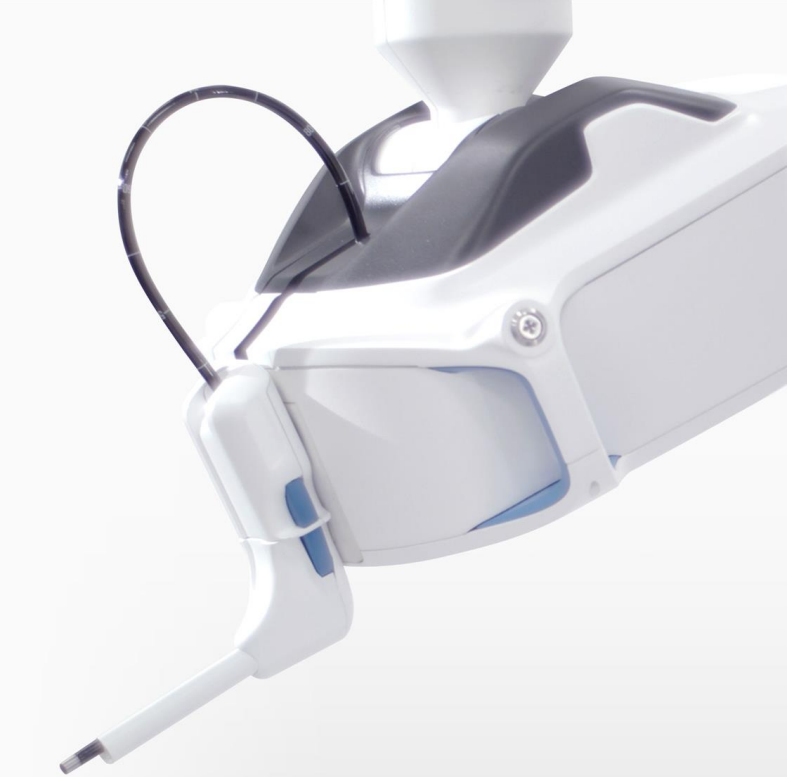
- Complete and document preclinical live animal (swine) and cadaver surgery studies
- Submit Investigational Device Exemption (IDE) application to FDA
- Obtain ISO 13485 Certification
- Receive IDE approval from FDA

Fourth Quarter:

- Complete and document human confirmatory studies performed under IDE
- Submit technical file to European Notified Body for review for CE Mark
- Submit 510(k) application to FDA

Commercial Timeline

	2018	2019	2020
Established US & EU Centers of Excellence	✓		
Proven Feasibility	✓		
Integrated Simulation Training	✓		
Engineering Confidence Build	✓		
Design Freeze		✓	
Begin GLP Animal Studies		**H1**	
IDE Approval and Confirmatory Human Studies		**H2**	
Submit 510(k) Application		**H2**	
Submit Technical File for CE Mark		**H2**	
Anticipated Regulatory Clearance			●
Projected Initial Launch			●



Summary

- Targeting growing 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
- Capital equipment, service and recurring revenue streams
- Experienced management team with record of success

Thank You

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