

Company Profile

Industry: Image Guided Surgical Navigation
Employees: 1
Founded: 2017

Financing

\$1.025M Pre-Seed

Business Model

Minimally Invasive Surgical Instruments & Software

Addressable Market

\$820M
 450K Procedures

Patents

2 Utility Applications
 2 PCT Applications

Hospital Partnerships

Partners Healthcare,
 Brigham & Woman's Hospital

Management

Alan Lucas, CEO
 Co-Founder & Director

David Fogel, CPA, CFO

Board of Directors

Raphael Bueno M.D.
 Co-Founder & Director
 Chief, Thoracic Surgery,
 Brigham & Women's Hospital

Giacomo Basadonna M.D., PH.D.

Professor of Surgery,
 University of Massachusetts
 Medical School

Scientific Advisors

Jayender Jagadeesan PH.D.
 Co-Founder
 Assistant Professor of
 Radiology, Brigham &
 Women's Hospital

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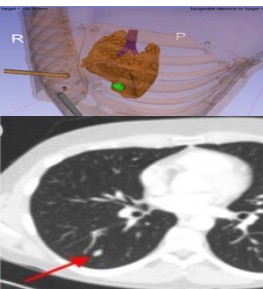
Navigation Sciences, Inc. is developing, novel Image-guided Video Assisted Thoracoscopic Surgery (iVATS) technology for minimally invasive identification and removal of early stage lung tumors and other soft tissue cancers. The technology, which combines intraoperative imaging with Augmented Reality (AR), promises to improve surgical outcomes and increase operational efficiency. There is significant additional potential for, image-guided surgery for breast, liver and other cancer types such as thyroid and brain.

Key Unmet Needs in Soft Tissue Surgery

The need for improved soft tissue surgical technology in early stage cancers is large and growing, particularly with the advent of more effective screening techniques. In Navigation Science's lead indication, lung cancer, the demonstrated success of chest CT screening in high risk populations in lowering cancer deaths is creating new opportunities for technology to improve lung surgery. Removal of small tumors deep inside the lung with appropriate surgical margins, however, remains a significant challenge. Insufficient distance between the tumor and the resection margin has been shown over time to be associated with cancer recurrence and death.

Similarly, in breast cancer, lack of precision in localizing tumors and excision with appropriate surgical margins, is a significant contributor to repeat surgeries in approximately 25 percent of women who undergo lumpectomies.

iVATS Innovative Solution



Navigation's surgical instruments and AR software provide real-time GPS navigation to precisely locate and remove tumors with optimal margins, while preserving lung function. The technology is designed to reduce recurrence and re-operation rates, as well as increase operating room efficiency.

The revolutionary multi-modal technology is used in conjunction with minimally invasive instruments that include: imaging and proprietary, real time navigation algorithms; and tumor cutting devices that allow for surgical precision specific to the patient's anatomy.

Radiology images are synchronized with real-time information to enable the clinician to perform procedures with precision guidance. The system is easily integrated into existing operating room workflow.

Technology Proof of Concept

In an initial 25-patient clinical trial in early stage lung cancer, there were no significant complications and all nodules were fully resected with negative margins. The study also demonstrated the technology integrates with surgical workflow. The Phase I-II study was published in the peer-reviewed [Journal of Surgical Oncology](#).

Addressable Market Opportunity

There are more than 450,000 surgeries per year in the US, for lung, breast, liver, thyroid and brain, where Navigation's technology may benefit. The initial addressable market is the over 87,000 US patients diagnosed with early stage lung cancers. Growing recognition of the value of CT X-ray screening and favorable CMS reimbursement coverage for high risk patients are expected to drive up the number of early stage lung cancer diagnoses. There are significant follow on opportunities in breast cancer, where an estimated 250,000 US lumpectomies are addressable with the technology, as well as with liver, thyroid and brain tumors.

