



## Titan Medical **SPORT™** **Surgical System**

### **Minimizing patient recovery times and costs with a mobile, precise robotic surgical system**

*Ximedica developed a mobile, single-port robotic surgical system from a napkin-sketch to a functional prototype.*

#### **The Problem**

Robotic laparoscopic surgery allows surgeons to precisely operate on their patients through small incisions, reducing scarring, accelerating patient recovery times, and decreasing overall risk. However, typical surgical robotic systems are large and inflexible. As such, they cannot be moved between operating rooms, and often require repositions or multiple incisions to operate effectively – making these procedures less accessible.





## Innovation Opportunity

To bring a novel robotic surgical system to fruition quickly all while demonstrating good progress along the way to ensure continuous funding.

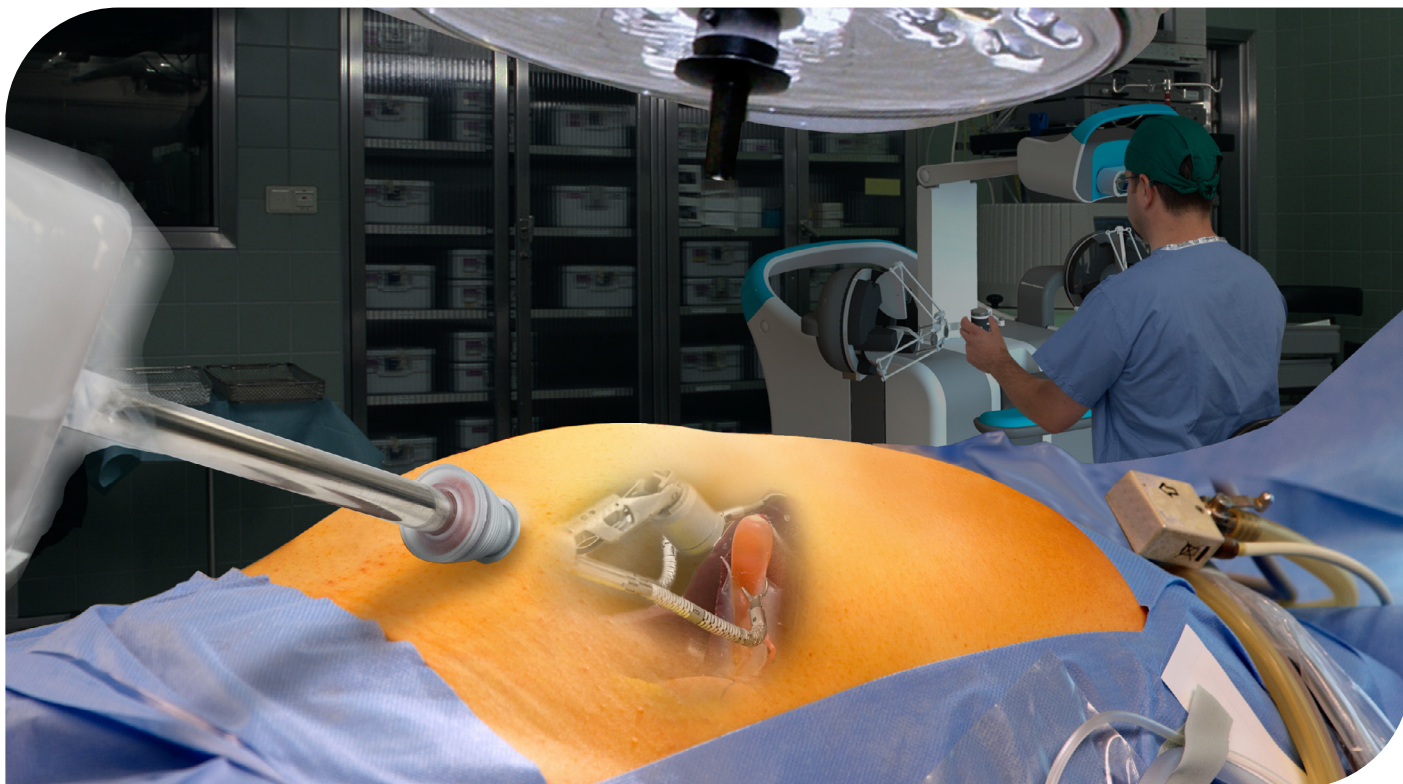
## Ximedica's Involvement

Ximedica focused efforts on the most critical to function sub systems first to reduce technical risk. Each subsystem was tackled separately and in parallel to maximize efficiency and minimize effects across subsystems. Breaking the system down into manageable sub systems and utilizing rapid prototyping and simulated modeling allowed Ximedica to foster closer focus while enhancing development speed. Through this process, a team of cross-functional product development engineers and other professionals produced functional designs of core subsystems and were able to demonstrate successful product performance in a short period of time. Our human-centric design approach ensured that the device was as precise as it was usable – making it easier for physicians to incorporate this technology into regular procedures.

## Ximedica Skills Used

- Concept Generation
- Human-Centric Design
- Pre-Production Prototype Development
- Mechanical Engineering





## Value Delivered

With Ximedica, the development of the SPORT™ Surgical System reached critical milestones, including gathering user-needs research, achieving technical feasibility, and performing live-tissue testing in just 15 months.

Development of a pre-production prototype is underway and will be proceeded by preclinical trials, clinical trials, regulatory submission, and a pilot launch. Titan Medical plans to introduce the SPORT™ Surgical System in world's two largest markets for robotic surgery - Europe and the United States. The system will make robotic surgeries more appealing and accessible, reducing necessary incisions and improving recovery times for patients undergoing a variety of different procedures.

ISO 13485:2016 Certified (Notified Body: NSAI): Certificate # MD19.4422  
Design and process photos depicting Titan Medical™ SPORT Surgical System.  
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