Smart catheter system: A new bladder control management solution

With component sourcing and supply chain management support from Trelleborg, Splanial Singularity developed the Connected Catheter to offer improved quality of care.

MICHELLE JACOBSON

A fully integrated, intelligent, self-managing catheter system designed to improve patient outcomes, help medical professionals better control for men who face daily challenges of incontinence. The Connected Catheter includes: the bladder - the sensor to detect the fullness of their bladder; the sensor to monitor their activity; the patient’s bladder activity is monitored in real-time with AI Enhanced Bladder Management System. The system is integrated with the smart source and final assembly from Trelleborg, which is driven to overcome the risks and errors that current bladder management systems present.

The design process

Because the catheter needed to be used as a long-wear device, it required a biocompatible material. To meet this requirement, the Splanial Singularity team partnered with physicians at Trelleborg Healthcare & Medical, where “Silicon is known for long-term stability, is very flexible, and can be used on soft surfaces in a wide range of temperatures and humidity.”

Medical device makers often use silicone rather than a thermoplastic elastomer (TPE) to be stable and functional in many environments.

Trelleborg was able to manufacture the components in-house and complete final assembly at its Tustin, California facility, reinvigorating the transition from component manufacturing to final assembly.

The partnership provided Splanial Singularity with rapid prototyping, full component manufacturing, and ultimately full device assembly scale-up and finished device manufacturing.

A NEED TO SERVE

While serving in Afghanistan, Derek Berner suffered injuries after being shot by a sniper, which left him with a neurogenic bladder. Although he had no particular desire to work in the military, Berner still wanted to do his part to assist others, those newly faced with the daily hardships of paraplegia. Berner went on to continue his studies and to become a new godfather to those who have faced the outcome of spinal cord injury.

Berner is a leader of a business administration degree, Berner launched his own medical device company - Splanial Singularity.

“Now I am visibly enabled,” he shared in creating devices to improve the quality of life for people with spinal injury, Berner says, “so the first product we decided to work on was this bladder management system designed for men.”

Splanial Singularity is a seed stage, venture-backed medical device company located in San Clemente, California. Company website:

2016: Splanial Singularity launched
2016: Acceleration - The company completes MedTech Innovation. "VibrantHealth's, HealthBox LA
2017: Equity investment secured
2019: First clinical trials and Clinical Feasibility Study
2019: Launches clinical validation study and CE regulatory submission

A smart catheter

The Connected Catheter is fully integrated to the manuke anatomy. The catheter tip incorporates a magnetic valve - and the sensor to detect the fullness of their bladder and monitors their activity. The calibrator software uses new features that ensure their stability and convenience while reducing frequent disconnection or an external bag, allowing a more natural body to collect fluid.

Splanial Singularity

Trelleborg