SUCCESS STORY

LTA Projects

Tennessee Manufacturing Extension Partnership

"I want to let you know how much we appreciate [the TTU] Capstone Program . . . it is not only a great tool for educating senior engineering students in the real world, but it also brings outstanding, creative solutions to the business community that we would ordinarily not be able to afford." Steve Garner, Owner

Student Capstone Projects Connect Small Manufacturers to Creative Solutions

ABOUT. LTA Projects builds the most portable lighting and antenna towers in the world. Located in Cookeville, Tennessee, the company has six employees. For several years, LTA Projects has manufactured high-pressure inflatable antenna towers to serve as portable and back-up solutions for emergency and public safety communications.

THE CHALLENGE. LTA Projects utilizes an internal blower and pressure control system to keep its self-inflating towers in the correct pressure range. However, inaccuracy and even occasional failure in the analog pressure control systems resulted in performance issues, and LTA Projects reached out to the Tennessee Manufacturing Extension Program (TMEP), a NIST MEP affiliate, for assistance. As a program of the University of Tennessee Center for Industrial Services, TMEP is connected to a network of colleges, universities and technical schools, and works with Tennessee Tech University to identify companies and projects for Senior Student Capstone Projects. TMEP selected LTA Projects as a candidate for the Capstone Project and participating students collaborated to address the pressure control system challenges.

MEP'S ROLE. An expert faculty member and a Senior Student Capstone Electrical Engineering Design Team met with LTA Projects to identify issues, discuss the scope of the project and put together a plan to address the challenges. Over the course of the project, the design team worked with the company to address the workings of the analog pressure control system and develop a digital pressure control system design solution. The new design offers almost 50 percent better accuracy and a negligible failure rate. In addition, the pressure range parameters are modifiable at LTA Projects rather than at the sensor manufacturer. LTA Projects is currently using the design on all mission-critical products and the successful investment is increasing sales. The company looks forward to continued assistance through the Capstone Project program as it pursues wireless communications to add longer range remote pressure sensing, control, and data-collection capabilities to the system.

RESULTS

- Increased sales of **$50,000**
- New design offers **50%** better accuracy
- **$20,000** increased investment in new products, equipment and workforce

NEXT STEPS

193 Polk Ave, Suite C
University of Tennessee Center for Industrial Services
Nashville, TN 37210

(615)532-8657

jennifer.hagan-dier@tennessee.edu

www.cis.tennessee.edu

THE UNIVERSITY of TENNESSEE
CENTER for INDUSTRIAL SERVICES