



ETV Emerging Technology Ventures, Inc.

Contact: Cliff Hudson

Telephone: (575) 483-6002

Email: info@etvamerica.com

Website: www.etvamerica.com

FOR IMMEDIATE RELEASE

Release Date: November 14, 2017

Release Number: 17-11-14

New Mexico Small Business Assistance Program Announces New Project Approval

*Sandia National Laboratories and New Mexico Small Businesses to Collaborate on the
Development of an Unmanned Aerial Inspection System for Wind Turbines*

Alamogordo, NM – November 14, 2017 – The New Mexico Small Business Assistance (NMSBA) Program announced the approval and funding of a collaborative project between Sandia National Laboratories (SNL) and a three-member New Mexico small business team to develop an Unmanned Aerial System (UAS) for the inspection of wind turbines. The small business team of Emerging Technology Ventures (ETV), Systems Technology Solutions (STS), and Robotic Technology Solutions (RTS) is developing an end-to-end capability solution using autonomous UASs that employs a multi-modal sensor to inspect wind turbines and a neural network engine to provide predictive condition-based maintenance recommendations to wind farm operators. SNL will provide critical expertise on nondestructive inspection techniques for turbine blades and evaluation of sensor arrays to support the optimization of the neural network engine for predictive analytics.

Achieving high levels of turbine availability while optimizing maintenance costs is fundamental to a profitable wind-energy business. The market for UAS wind turbine inspection services is projected to earn \$6 billion annually by 2024. Current inspection systems include rope access, piloted drones, and ground cameras. Most inspections acquire visual data only and require manual post-processing. The team's solution utilizes autonomous UAS teams acquiring visual, LiDAR, thermal, and ultrasonic data for processing through a neural network engine which provides condition-based maintenance recommendations and the remaining useful life of turbine components.

The solution enables wind farm operators to identify the earliest symptoms of malfunction or damage in a wind turbine and to compare information on the current state of the machine against the turbine's historical data to make prognoses for the future. It reduces downtime, increases safety, eliminates unnecessary preventative component replacement, and extends the lifetime of valuable assets. The result is improved productivity and profitability.

“The NMSBA program and SNL have been invaluable in the team’s development of the UAS inspection system. Following our initial feasibility assessment with SNL this year, this phase will result in the deployment of a solution for field testing and customer feedback,” said Cliff Hudson, ETV CEO and Industry Project Lead. ETV will provide UAS platforms, sensor integration, and autonomous operations technology for the project.

STS is developing the sensor suite and neural network engine for the image processing and predictive data analytics. “The project allows us to adapt and extend our work in the precision agriculture market to this rapidly expanding inspection market,” said Alex Martinez, STS Lead Software Engineer. “We see future expansion into other critical infrastructure inspection markets including bridges, dams, and utilities.”

RTS will provide UAS inspection services for the project. “This enhanced inspection capability will significantly improve our inspection throughput and the quality of the data and recommendations we provide to our customers,” Daniel Contreras, RTS Operations Manager, stated. “This collaboration model has worked well in our entry into the precision agriculture market with ETV providing platforms and autonomous operations and STS providing sensor solutions and predictive analytics while we provide the field operational services for the customer base.”

About the New Mexico Small Business Assistance Program (NMSBA):

The NMSBA Program allows New Mexico small businesses facing a technical challenge to access the unique expertise and capabilities of Los Alamos and Sandia national laboratories. At no cost to the business, small businesses with a technical challenge can seek assistance from lab scientists or engineers for projects that require testing, design consultation and access to special equipment or facilities.

###

For more information please visit <http://www.etvamerica.com> and <http://www.nmsbaprogram.org>.