



PRESS RELEASE

GE Software Powers Research on Efficient Wind Energy Production

Department of Energy research project will use GE's Proficy SmartSignal solution to predict equipment problems before they happen

CHARLOTTESVILLE, VA November 10, 2011 GE today announced that it is working with Illinois Institute of Technology (IIT) to investigate ways to improve wind farm productivity and efficiency. The results of the study will directly contribute to future product and service designs. The project is part of a larger Department of Energy (DOE) investment of \$9 million to an IIT-led consortium to enhance the leadership role of the U.S. in testing and producing the most advanced and efficient wind turbines in the world.

The two-year project will focus on helping wind farms to reduce maintenance costs and improve availability through predictions of impending problems. The project's research will be conducted near Marseilles, Illinois on a GE 1.5 MW series wind turbine operated and maintained by Invenergy, the nation's largest independent wind power generation company.

"With skyrocketing costs, wind farms need to know ahead of time what needs to be fixed—and what doesn't," said Stacey Kacek, GE Intelligent Platforms' General Manager, Asset Intelligence. "If they have credible early warning of impending equipment problems, the farms can prioritize tower inspections, optimize crane usage, and leverage resources in remote locations. Being able to avoid surprises and take control of maintenance in a proactive way translates to significant cost savings for the industry."

IIT students will be conducting research using GE's Proficy SmartSignal software on the GE wind turbine to learn how to detect faults even earlier and more accurately than currently possible. The project includes adding more sensors than the industry standard to improve condition-monitoring precision, and enhancing the SmartSignal models to include measurements of vibration, lube oil, and blade pitch motors. The IIT team will monitor the turbine remotely from the IIT campus and analyze the energy output and overall equipment performance.

"Proficy SmartSignal software essentially acts as a supporting experienced operator and technician, leveraging past experience and working 24/7," said Dave Parta, Project Manager, GE Intelligent Platforms. "In the wind industry, the solution is used to monitor the sensors on remote turbines and provide exception-based notifications when a turbine is not acting as it should based on its history. This is particularly challenging, given constantly changing wind speed, direction, shear, and turbulence. The SmartSignal solution collects and analyzes tens of thousands of data points daily on



wind farms across the country and provides early warning of impending turbine and instrumentation failures.”

“The goal of this project is to illustrate how advanced and automated Predictive Diagnostics can improve the availability, reliability, and cost performance of wind power generation,” said Mohammad Shahidehpour, IIT Bodine Professor and Director of the Robert W. Galvin Center for Electricity Innovation. Dr. Shahidehpour is serving as the principal investigator for the consortium. “As a result of this research, we hope to improve the sensing and modelling of wind farms. We’ll also be developing wind energy courses to address the technical, operational, social, and environmental aspects of wind energy. This will ensure that we have not only the technology, but also the talent necessary to compete and further innovate in the global marketplace.”

For more information: www.ge-ip.com/smartsignal

About GE Intelligent Platforms

GE Intelligent Platforms is an experienced high-performance technology company and a global provider of software, control systems, services, and expertise in automation and embedded computing. We offer a unique foundation of agile and reliable technology providing customers a sustainable competitive advantage in the industries they serve, including energy, water, consumer packaged goods, oil & gas, government & defense, and telecommunications. GE Intelligent Platforms is headquartered in Charlottesville, VA. For more information about GE Intelligent Platforms, visit www.ge-ip.com.

About Illinois Institute of Technology

Founded in 1890, IIT is a Ph.D.-granting university with more than 7,700 students in engineering, sciences, architecture, psychology, design, humanities, business and law. IIT’s interprofessional, technology-focused curriculum is designed to advance knowledge through research and scholarship, to cultivate invention improving the human condition, and to prepare students from throughout the world for a life of professional achievement, service to society, and individual fulfillment. For more information about this project and other innovative electricity integration research, visit www.iit.edu/galvin_center.

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