

INNOVATION

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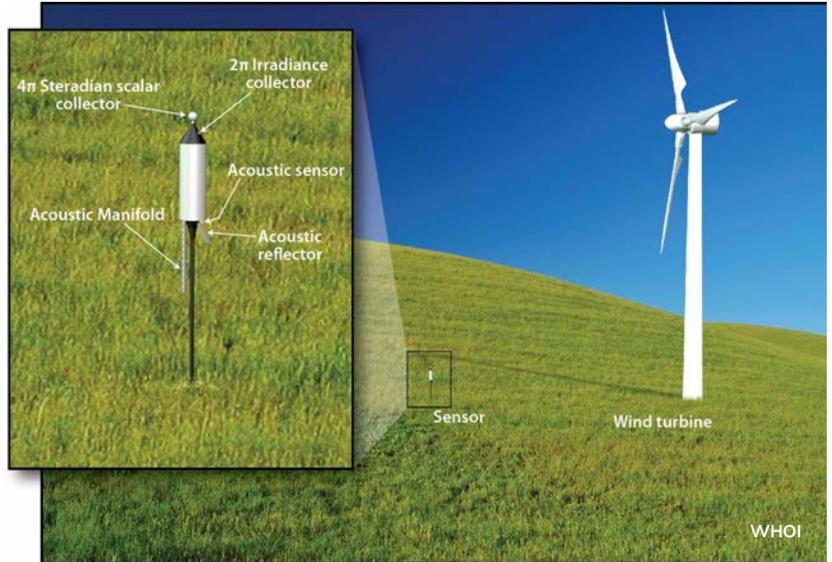
Innovative Wind Turbine Monitor Developed

The Woods Hole Oceanographic Institution has received a patent for its self-regulating terrestrial turbine control through environmental sensing.

Wind energy is a widespread clean alternative to energy from fossil fuels. The increasing number of wind-turbine installations highlights the need for comprehensive consistent environmental data, and the ability to instantaneously regulate the operation of wind turbines in response to immediate changes in environmental conditions from both external sources and the turbine itself.

The Multimodal Environmental Impact Monitor, or MIME, developed by engineers at The Woods Hole Oceanographic Institution (WHOI), uses an all-in-one sensor package that measures flicker, acoustic noise, and vibration generated by wind turbines. Alone or in combination, data from these modalities can provide input for turbine-control paradigms in order to optimize turbine operations and/or maximize energy production.

Turbine-performance management as well as site- and environmental-impact assessments for wind-turbine developments, are hampered by lack of available weather-tolerant instrumentation and inadequate sensors. Thus, appropriate long-term series assessments are not made, environmental- and human-health impact is not accurately determined, and output is not optimized.



“Current models for blade-shadow flicker don’t take into account surrounding reflectors or structures, only topography and sun placement, and such estimates may be inaccurate,” said WHOI Senior Engineer & MIME Inventor Paul Fucile.

Fucile also notes that measurement of turbine infrasound generation has become an area of interest in recent years — particularly because of its potential health effects on those living in close proximity — and is something that MIME measures with great accuracy.

Accurately determining the environmental impact and site suitability for new turbine installations allows for responsible planning and building and also

MIME Wind Turbine Sensor.

allows developers to establish an accurate pre-installation baseline.

MIME is intended for permanent installation at turbine sites for persistent observation with the option for turbine control, or it can be placed on a tripod for short-term studies of multiple sites. It’s designed for ease of use.

“The goal is to provide something that is affordable and user-friendly,” Fucile said. ↵

Source: The Woods Hole Oceanographic Institution

For more information, go to www.whoi.edu

System Monitors Motion and Impact of Offshore Vessels

UK Electronic Solutions (part of NS-SLGlobal Group), has created a new self-contained motion and impact monitoring system suited to offshore vessels.

The system, Oceanic Dynamics, protects the longevity of offshore assets by

monitoring and reporting vessel impact on structures, passenger comfort, and safety and engine performance and reliability.

Offshore structures have highly stringent requirements when it comes to the

total impact force allowed from docking vessels. Vessels are generally obliged to remain within pre-specified ranges of impact force and to operate only within certain environmental conditions, or else run the risk of voiding their

service-level agreements. It is advantageous for companies operating vessels to closely monitor impacts that occur while docking and offloading in order to justify their performance. Oceanic Dynamics uses a microelectromechanical-system-based orientation sensor to monitor motion and impact of the vessel as it docks, enabling vessel operators to keep in line with regulations.

While impact monitoring was the starting point and primary function of the system, Oceanic Dynamics also is able to monitor fuel efficiency, engine data, and route information, as well as the vessel's dynamic stability within the water. These extra functions offer transfer vessel operators the potential to justify the cost efficiencies and eco credentials of their service. Oceanic Dynamics also employs an HD CCTV bullet camera to record footage from the deck of the vessel at all times. The video footage helps clarify events on board and provides further visibility when the vessel docks.

"We are currently (testing) Oceanic

Dynamics and have installed the system on our newest crew transfer vessel, Dalby Ouse," said Steve Bartram, operations manager of Dalby Offshore. "So far, we are extremely impressed with the results and have already seen real value in our investment, particularly as it helps us comply with the impact force and contractual regulations required by the client. The fact that the product is available on a contractual basis is also cost-effective and convenient."

"Offshore structures are reasonably sensitive to impact, and there are limits to the amount of force vessels can exert on them while docking or working alongside them," said Paul Rutherford, managing director of UK Electronic Solutions. "Oceanic Dynamics is the first system of this type to address the complete requirement of operators and construction companies. Although Oceanic Dynamics was primarily developed to assist crew transfer vessels, it can also be installed on tugs, pilot vessels, and lifeboats where it similarly monitors performance and provides an

audit trail for incidents, maintenance, and performance."

Oceanic Dynamics delivers a weekly comprehensive report of how the vessel, crew, and environment are affecting vessel performance. This report can be tailored in-line with the specific content, complexity, and frequency required by the vessel operator. All information is stored locally within the unit until the vessel is within GSM or Wi-Fi range and can then be downloaded to shore. Should there be a requirement for data to be transferred to shore more immediately, the unit also is capable of integrating with any onboard satcom system.

The Oceanic Dynamics box is also highly compact and is contained inside a single briefcase. This is designed to create minimal physical impact and to ensure the system can be moved easily between vessels. ↵

Source: UK Electronic Solutions

For more information, go to www.oceanicdynamics.com

Flexible Coupler Kit Eliminates Need for Bonding Jumper

The T&B® Cable Tray flexible coupler kit from Thomas & Betts (T&B) features a bendable plate that allows for electrical continuity, which eliminates the need for a bonding jumper.

The flexible coupler kit also provides maximum horizontal installation flexibility and easy installation that eliminates the need for cutting cable tray side rails.

"We designed the T&B Cable Tray flexible coupler kit to be quickly and easily installed, and it provides excellent cable protection that ensures electrical conductivity without bonding devices," said Ralph Donati, product marketing

director at T&B. "It is a flexible and economical alternative to the more common AU/AH fitting."

Other features include an exterior strap that provides an accurate radius for any cable tray design requirements, formed ribs for greater cable protections and no sharp edges. It meets electrical continuity requirements of NEMA VE1 and CSA C22.2 No. 126.1.

Thomas & Betts Corporation, a

member of the ABB Group, is a global leader in the design, manufacture, and marketing of essential components used to manage the connection, distribution, transmission, and reliability of electrical power in utility, industrial, commercial, and residential applications. ↵

Source: T&B

For more information, go to www.tnb.com

The flexible coupler kit provides maximum horizontal installation flexibility and easy installation.

