MONITORING ON THE MOVE

Hyperconnected condition monitoring tools help teams spot problems early

On-the-go asset condition monitoring is easier with smart, connected, and portable tools that allow for timelier and more-precise intervention before failure. In the first entry in this two-part series, we will look at new systems that automate condition monitoring, inspection, and non-destructive testing (NDT) data collection and analysis, plus modern thermal imaging and motion-detection cameras that capture early signs or precursors of degradation.

Automation and digitization are the drivers behind the latest portable monitoring systems. The new InspectMT mobile inspection system from Design Maintenance Systems Inc. (DMSI) is deployable on Windows, Android, and iOS devices. It allows users to leverage the specific features of those devices, such as Wi-Fi for communication, Bluetooth for integrating vibration and temperature devices, cameras for taking pictures, and barcode scanning for asset identification, says Todd Chow, vice president of product development at DMSI.

"With InspectMT, you can enter, access, and transfer data instantly, and that enables seamless integration of the users' insight, current asset health, and diagnostic and prognostic capability, all powered by DMSI's MAINTelligence (asset performance management system)," explains Chow.

The iOS-supported SKF Pulse is designed for simple, cost-effective machine health data collection and analysis. It consists of a durable, handheld sensor that measures the velocity, acceleration, and temperature of rotating equipment as well as a mobile app that guides users through the inspection process and connects them to expert analysis, advice, and diagnostic reports from SKF.

EMERSON

https://plnt.sv/1907-TT2

The analysis and recommended corrective actions are based on decades of SKF expertise in predictive maintenance, rotating equipment performance optimization, and root-cause analysis, says Josh Flemming, director of strategic market digital transformation at SKF.

NEW, AUTOMATED CONDITION MONITORING SYSTEMS AS WELL AS TOOLS SUCH AS MOTION-DETECTION CAMERAS CAN CAPTURE EARLY SIGNS OF DEGRADATION.

VibePro 24/7 from GTI Predictive Technology is a wireless, iPad-based, route-based data collection and analysis offering that utilizes remote servers for access by web-based analysis tools, making the data "truly ubiquitous," says Paul Berberian, condition monitoring specialist at GTI Predictive Technology. Use of the iPad platform makes it an accessible, affordable, and powerful solution, he asserts.

The iPad technology allows VibePro 24/7 to integrate wireless vibration, ultrasound, and thermography tools into one route by connecting the appropriate sensor. Bar-code scanning makes data collection simple by identifying the machine that needs to be measured.

AMS Inspection Rounds from Emerson is designed to digitize inspection information from routes. Routes are created and scheduled in a server-based application, loaded on Emerson's rugged AMS Trex Device Communicator, and tracked in a KPI dashboard. An app in the AMS Trex automates the capture of field condition data, which can be automatically sent to the server via Wi-Fi or transferred via USB.

"We're now able to turn manual routes into digital data," says Drew Mackley, director of reliability solutions at Emerson. "What was once only on paper can now be tracked and utilized to guide maintenance decision-making."

CONDITION VISUALIZATION

Smart cameras can support the practical implementation of Industry 4.0. The all-in-one IRSX Series Infrared Cameras from Automation Technology (AT) combine a calibrated

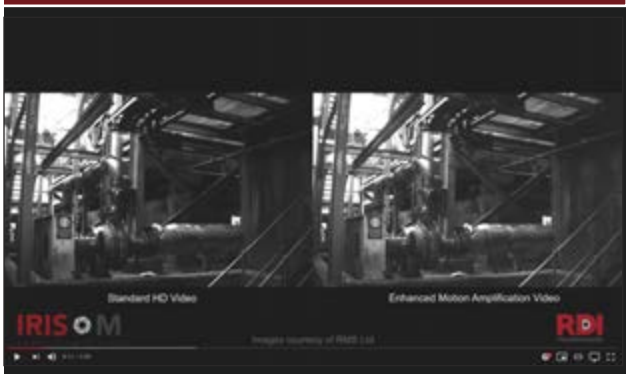
thermal imaging sensor with a powerful data processing unit in a compact, rugged IP-67 housing. Multiple protocols are supported for communication with automation and control equipment.

Equipped with application-specific apps, the IRSX cameras deliver thermal images along with intelligent analysis of a component's condition. They can also be used autonomously to automatically detect temperature anomalies and generate alerts before a failure or fire occurs. "With these smart cameras, integrators are able for the first time to create application solutions very quickly without special software and, in principle, without programming knowledge," says Michael Wandelt, managing director of AT.

The Iris MX high-speed camera from RDI Technologies uses a proprietary Motion Amplification video processing technique to visualize subtle displacement. The camera takes highly accurate measurements of extremely small vibrations or motions in machinery, and produces an amplified video displaying faults that would have otherwise gone unnoticed.

Iris MX expands the frequency range of the company's flagship Iris M camera, thus "opening up the world of higher-speed applications," says Jeff Hay, founder and CEO of RDI Technologies. "The Iris MX lets you visualize motions unseen by the human eye in near real-time leading to instant action and results, making it a cutting-edge problem-solving tool."

RDI TECHNOLOGIES



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"WE'RE NOW ABLE TO TURN MANUAL ROUTES INTO DIGITAL DATA. WHAT WAS ONCE ONLY ON PAPER CAN NOW BE TRACKED AND UTILIZED TO GUIDE MAINTENANCE DECISION-MAKING."

–DREW MACKEY, EMERSON

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