

Azima & Flowserve harness AI technology for machine maintenance.

New service model reduces maintenance costs and increases plant revenue.

Pioneering customer is innovative owner/operator in Power Generation industry.

Boston, MA – April 5, 2018: Azima, Inc. announced the first-ever deployment of a groundbreaking new approach to Predictive Maintenance for industrial companies -- an offering jointly developed with Flowserve Corporation, one of the world’s leading providers of fluid motion and control products.

The joint offering lets industrial machines “call for help” when maintenance problems arise – and harnesses AI to diagnose both the problem and solution in record real-time.

The pioneering solution was successfully deployed at a 778 MW power generation facility in Lebanon, PA, that provides electricity, fuel conversion, and ancillary services. The facility is owned by an innovative, results-driven developer, owner, operator, and investor in power generation and electric transmission infrastructure throughout the United States. Since inception, the parent company has developed, constructed, managed or acquired more than 38,000 MW of competitive power generation and 56 miles of transmission infrastructure, for which it has raised over \$36 billion in debt and equity financing.

The new Azima-Flowserve offering harnesses artificial intelligence and the “Industrial Internet of Things” (IIoT) to simultaneously:

- Increase the speed and accuracy of machine fault-detection in industrial settings;
- Eliminate the cost of unplanned maintenance for heavy capital equipment;
- Reduce the amount of labor required for maintenance and reliability testing; and
- Increase revenue and profit margins through improved industrial uptime.

The Azima-Flowserve solution employs fault-detection “nodes” created by Flowserve, linked to highly-advanced vibration analysis technologies developed by Azima. Together, these technologies form a highly-sensitive and efficient fault-detection ecosystem, with Flowserve serving as the “fingertips” and Azima as the diagnostic brains of the operation.

Here’s how it works:

- High-quality, cost-effective Flowserve measurement nodes are attached to dozens of pieces of high-value, high-maintenance rotating capital equipment.
- Flowserve nodes are tuned to detect an overall vibration pattern in a selected range, which (when found) indicates a potential problem which could lead (within 1-2 months) to machine shut-down or other serious equipment failure.
- When problems are detected, plant personnel are automatically alerted to check the machine (and only that machine) with a highly-specialized triaxial vibration data-collector developed by Azima.
- Azima’s handheld device collects full-spectrum vibration data, and sends it to Azima

(via the Internet) for remote, in-depth analysis by Azima’s world-class team of vibration analysts and experts;

- Azima analysts determine the exact nature of the machine fault, formulate recommendations for corrective action, and transmit them electronically to maintenance professionals on the ground.

The Azima/Flowserve solution is ideal for heavy capital equipment (e.g., motors, pumps, fans, and rollers) that rotate at speeds over 150 rpm. On appropriate equipment, the Azima/Flowserve model eliminates the need for traditional “walk-around” PdM programs, and allows machines to “speak for themselves” when they have a problem.

This new model saves labor and time, and increases PdM efficiency and accuracy. The net business result is a dramatic decrease in the cost of unplanned maintenance, and a substantial increase in production uptime and revenue-generation.

About Azima, Inc.

Azima maximizes industrial productivity on a global scale. When Azima clients have capacity, they can sell it. They’re serious about uptime, and rely on Azima to maximize it.

Azima delivers programs & results, not parts & pieces. We combine the *efficiency* of algorithms, the *accuracy* of data, and the *judgment* of experts. Azima gets results, and we do it at scale.

No one maximizes industrial productivity in more industries and places than Azima. We cover 100,000 assets in dozens of countries, on every inhabited continent. We even handle stuff on the oceans.

Azima is headquartered in Boston, with locations and experts across the Americas, Europe, the Middle East, and Asia. For more information, please visit www.AzimaGlobal.com.

About Flowserve Corporation

Flowserve Corp. is one of the world’s leading providers of fluid motion and control products and services. Operating in more than 55 countries, the company produces engineered and industrial pumps, seals and valves as well as a range of related flow management services. More information about Flowserve can be obtained by visiting the company’s Web site at www.flowserve.com.

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