

# Embedded Analytics Expand Monitoring, Improve Asset Reliability

*Participants in this Plant Engineering survey reported the top three challenges to improving reliability in their facility to be:*

- *Lack of resources or staff - 48%*
- *Lack of understanding of new maintenance options/ technologies - 38%*
- *Lack of training - 32%*

**Reported by Bob Vavra and Amanda Pelliccione, A Race Against Time, Plant Engineering Magazine, March 13, 2019**

## What if...

- You could have visibility to the current health of assets that can shutdown production?
- You could expand your monitoring program without adding personnel?
- You could find a cost effective way to implement IIoT?

In recent years, avoiding downtime and increasing asset reliability have become the focus for many companies seeking to expand their position in the marketplace. While conventional machinery monitoring systems provide exceptional coverage for your most critical assets, these systems tend to be cost prohibitive for other essential or balance of plant equipment. They have high installation costs and require a trained analyst to interpret the data. Therefore, a different approach is required to reap the benefits of online monitoring across the facility.

Emerson's AMS Asset Monitor is an edge device that uses pervasive sensing coupled with embedded prescriptive analytics to determine asset condition and broadcast the results of the analysis in an easy-to-understand format. Thanks to its industrial design and hazardous area ratings, field installation at the machine site is simple and affordable.

### LACK OF VISIBILITY

Manual monitoring programs are designed to uncover issues with your process equipment, but it can be a challenge to cover the entire facility due to limited personnel. As a result, developing faults may remain undetected and lead to unplanned downtime. Automated monitoring offers some help by collecting the data, but a solid plan is required for this to bring benefit to the plant.



### NEVER ENOUGH PEOPLE

Having enough staff to collect the data is half the battle. You still need to convert that data into a diagnosis and a recommended course of action. That typically requires additional staff with extensive training and experience in vibration analysis.

### IIOT TECHNOLOGY WITH THE SAME OLD BUDGET

Traditional online monitoring solutions can be expensive and problematic to install. And traditional systems don't take advantage of modern IIoT and digital technology. You must change the way you approach monitoring the essential and balance of plant assets with cost effective solutions.

## AMS ASSET MONITOR

### CURRENT ASSET HEALTH STATUS AT THE EDGE

The AMS Asset Monitor does more than just alert users to developing problems - it provides a probable diagnosis and recommended course of action. Based on the latest edge computing technology, the AMS Asset Monitor processes data in the field and uses browser-based communications for the most immediate delivery of information and diagnostics. When connected to an asset performance management platform, users can receive updates in their office – or on their mobile device or connect to AMS Machine Works for detailed data analysis. Authorized users can then log into the device using the IP address and review the current health of the asset. The AMS Asset Monitor utilizes DeltaV's CHARM's technology to monitor vibration as well as process inputs. It publishes data, alerts, and recommended action over OPC UA to Emerson's DeltaV and other DCS systems. The AMS Asset Monitor provides health templates for fans, motors, gearboxes, pumps, and generic rotating assets in addition to the advanced analytics for assets such as hydrocarbon pumps, and heat exchangers that incorporate vibration analytics with process parameters to generate a holistic view of the asset. This applies analytics to data from different plant functions to create the most comprehensive view of asset health.



### INFORMED DECISION MAKING WITH LESS EXPERIENCE, NO ADDITIONAL HEADCOUNT

Embedded prescriptive analytics go beyond mere data collection to deliver application-based results and recommended actions. Each vibration input is evaluated for the ten most common problems with rotating equipment (e.g. balance, alignment, under lubrication and bearing faults) and the diagnosis is published in plain language - no vibration experience required. Vibration and process inputs can be viewed side-by-side, allowing both operations and reliability to be involved in the process.

### AFFORDABLE MODERNIZATION MOVES YOU FORWARD ON THE PATH TO IIOT

The AMS Asset Monitor offers simple, cost-effective monitoring for balance of plant equipment. At about 8 kg (17 lbs), it is built for easy, out-of-the-box installation by a single person. In addition to embedded prescriptive analytics, if the condition worsens the AMS Asset Monitor also offers protection capabilities to shut down the equipment before it can lead to catastrophic failure. The AMS Asset Monitor is a user-friendly, modern solution that changes the way you keep tabs on your assets and achieve IIoT goals for your plant.

*“The AMS Asset Monitor is interesting to us because we don’t have a vibration analyst or the manpower to collect data.”*

*“We don’t have an SME to do analysis. A box that can give us red, green and amber lights on our health would be great, along with some basic analysis.”*

*“60% of the asset monitoring cost is in the conduit, cable runs, junction box design, installation and commissioning.”*

*“We have reduced manpower in our reliability team. We would like to go more online with monitoring and on-demand for route collection.”*

Customer comments about the AMS Asset Monitor.

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