Orbit Magazine

Measuring, Monitoring, Managing Production Asset Health

Date : January 20, 2015

Introducing Production Asset Reliability:

Measuring, Monitoring, Managing Production Asset Health

Adding context to data to create insightful information for Predictive Maintenance

John Renick, Director of Partner Solutions, Meridium

The next evolution of manufacturing software is about connecting people, information, and devices to provide a more holistic view of asset health to better manage plant operations, reliability strategy and operational risk. That evolution is at the heart of the integration between Meridium's suite of enterprise performance management and asset strategy solutions and GE's condition monitoring and diagnostics platform, System 1. Production Asset Reliability (PAR), the integrated solution, drives better management of assets where conditions, age, performance, and criticality influence an organization's maintenance and operational strategy. Together, GE's Bently Nevada product line and Meridium represent an integrated, holistic Predictive Monitoring solution with complementary capabilities that can help avoid duplicate maintenance systems and costs.

The Meridium/GE Bently Nevada solution eliminates the complexity of monitoring, measuring and diagnosing asset health

PAR turns operational, monitoring and maintenance data into a true picture of asset health to:

- eliminate the complexity of monitoring, measuring and diagnosing asset health by providing all asset data in a single location
- provide a simpler, more holistic view of predictive maintenance through centralized views of current and historical asset health
- offset the aging workforce risk with tools that capture knowledge and processes
- help companies move from reactive to proactive maintenance using risk based approaches to optimize the use of maintenance, inspection and engineering resources
- reduce risk and unplanned downtime by identifying potential failures, increase mechanical availability 1% to 3% and reduce maintenance costs up to 10%
- raise the visibility of production asset condition using comparative analytics to show near-real time dashboard views of enterprise operational data

Adding context to data helps reduce unplanned downtime by identifying potential failures in near-real time

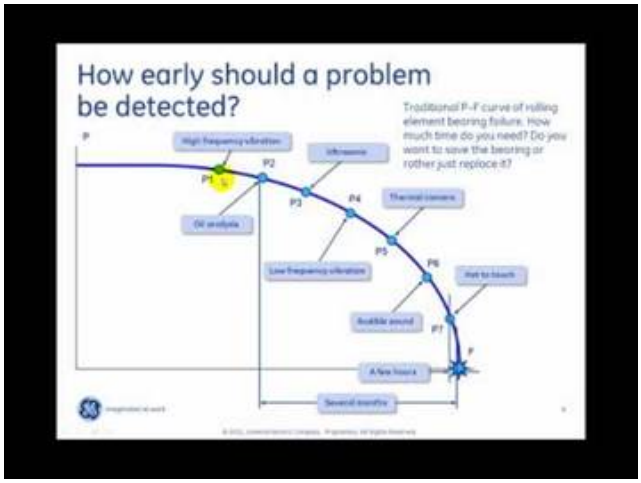
Combining Meridium's suite of offerings with GE's System 1 provides context to the data generated by diagnostics and monitoring. Adding context to this data yields meaningful, actionable information. This joint approach provides an enterprise view of assets for planners, maintenance personnel and reliability engineers, who can know - with confidence - the current health and condition of their assets. Consolidating data sources and analyzing information facilitates failure diagnosis and enables more informed decisions concerning maintenance activities, planning, investment and resource management, both short and long term.

PAR empowers capital and operational planners to make informed decisions based on production loss analysis and asset health and risk, categorized by asset class, location and other data points to help identify and isolate business-critical areas of focus. The solution automates the monitoring and response to these conditions, freeing up resources to perform additional strategic activities. The strategies that are created to monitor asset conditions also capture the knowledge of an aging workforce to produce and maintain competitive advantage.

Condition based maintenance can offset the aging workforce risk with tools that capture knowledge and processes

Connectivity: Critical to Operational Excellence

Why is connectivity critical to reducing operational risk? As we look at staying competitive in an ever-changing global market, the value of connectivity – connected people, connected processes and connected technology - cannot be underestimated. Simply put, connectivity provides the access, insight and predictive models that help improve asset availability, reliability, and cost. Connectivity to people, systems, and devices helps illuminate and manage the best asset strategy while making more intelligent equipment decisions based on industry experience.



Connecting people, information and devices helps companies move from reactive to proactive maintenance

Advances in cloud computing, analytics and mobility have transformed and streamlined manufacturing operations. The digital revolution eliminates outdated processes and provides a new perspective for industrial operations, offering groundbreaking ways to take operational data and properly communicate the information across an enterprise from the plant floor to the corporate office.

The digital revolution is here, and we are flooded by more data and complexity than ever before. Collaboration between companies, their vendors and technology is critical to advancing to the next stages of manufacturing software evolution. That's a key reason why strategic partnerships continue to grow, with technology providers in particular driving deep analytics to enable more informed decisions surrounding asset investment and maintenance. Capturing, analyzing and turning data into actionable information in heterogeneous plant environments requires an ecosystem that creates measurable opportunities.

A multitude of benefits that can be realized from the integrated ecosystem that is created by the connectivity and convergence of plant operational technology (OT) and information technology (IT):

- environmental and business sustainability
- preserving and extending the life of assets
- increasing asset availability and utilization
- maximizing operational effectiveness
- reducing fixed costs
- minimizing variable costs
- empowering workers throughout the enterprise

Together, Meridium and GE introduce PAR to harness the power of the Industrial Internet of that will enable predictive maintenance. Complementary technologies, services and a global presence can enhance solutions sets to provide customers with new functionalities and improved outcomes.

Driving Data from Plant Floor to the C-Suite

Increased connectivity and convergence of OT and IT is also driving the need to move data from the plant floor to the c-suite for better, more informed decision making about how to achieve operational excellence. Systems in today's connected plants and sites collect billions of pieces of data every day – both structured and unstructured. But how is that information made meaningful and then shared with the c-suite?

Typical data flows are convoluted. The process begins with workers, sensors and smart systems on the plant floor who are collecting, analyzing, consolidating and periodically updating data to a remote operation center or central reporting system. The data is collected from multiple plants, and analyzed, elaborated upon, packaged, and reported to management and perhaps the c-suite. This data is often fragmented and dispersed across multiple applications. By the time the packaged data makes it to management, it may be inaccurate, inconsistent or even out of date.

PAR provides a simpler, more holistic view of CBM

To dramatically improve the quality of strategic decisions, industry is demanding a shift from a layered architecture to a near-real time fluid environment. But the road to delivering timely, relevant insights to the c-suite includes several challenges. First, many organizations are outsourcing key aspects of maintenance, inspection, operations and remote monitoring.

A second challenge is managing that data: how do you manage the massive amounts of data from all those assets? How do you know if you are effectively applying smart technology to the right assets? It is critical to understand which assets, data and conditions to monitor. More importantly, are you combining the right data to get the key insights to act upon? With all this data coming in, are you bringing it together in a context and with a set of analytical tools to make sense of it and drive action from that?

In this world of complex assets and increasingly intelligent systems, we need to connect more than ever before. Meridium and GE are delivering a solution where asset and production data are collected across multiple plants, and with enhanced asset management and data analysis, plant operators and executives can derive a true picture of asset health, optimize production, better understand the asset life cycle, improve safety and manage operational risk for real advantages in their industry segment.

1631 Bently Parkway South, Minden, Nevada USA 89423
Phone: 1.775.782.3611 Bently.com