

PARTNER SOLUTION OVERVIEW

Aruba & ABB

Good Vibrations: Predicting motor, bearing and pump failures with wireless smart sensors

PREDICTIVE MAINTENANCE DRIVES OT EXCELLENCE

Up-time and defect-free processes are top of mind for operations groups, whose responsibilities are to keep plants and equipment running nonstop. Addressing maintenance proactively to minimize downtime, and maximize the utilization and performance of assets, can pay back handsomely. Gartner estimates it can reduce maintenance costs by up to 40%¹.

Predictive maintenance is an essential tool in this quest. By instrumenting equipment, monitoring for degradation, and identifying potential problems in advance of failure, predictive maintenance can provide visibility into the performance of assets, ensure high availability, and maximize the returns on often substantial capital investments.

The challenge is that identifying the source of possible failures is not always a simple task. Operations Technology (OT) sensor networks and gateways have traditionally been expensive to deploy, and can have vulnerable attack surfaces that keep Chief Information Security Officers (CISOs) awake at night. Chief Operating Officers (COOs), in turn, fret whether innovative AI predictive maintenance solutions require resources beyond the means of operations teams.

THE END OF BREAK/FIX

ABB is a technology leader in industrial digital transformation and has four, customer-focused, globally leading businesses. Thru its ABB Ability™ digital platform, ABB drives improvements in productivity, reliability, and efficiency.

The ABB Ability Smart Sensor is a battery-powered, Ex-rated, multi-sensor device that monitors rotating machinery for abnormal behavior indicative of pending failure. Status is communicated over a secure Bluetooth link, and analyzed

WHY ARUBA AND ABB

- Provides remote condition monitoring of rotating machinery over existing wireless infrastructure
- Improves operational efficiency by speeding the transformation from break-fix to predictive failure modeling
- Cuts deployment and add/move/change costs by using wireless sensors and networks
- Eliminates the cost of separate Bluetooth gateways
- Protects data and communications using secure tunneling
- Works everywhere in the plant including Ex HazLoc areas

by ABB's advanced algorithms. Operations engineers are automatically notified of out-of-normal conditions well before failure, allowing repairs to be performed before processes are impacted.

The Smart Sensor enables customers to move from break/fix to predictive maintenance; a digital transformation that reduces downtime, enhances asset utilization, and optimizes scheduling of field engineers - all of which ultimately boost profitability.

In the past, condition monitoring was predominantly performed on critical equipment due to the high cost of monitoring equipment and its installation. Most of the assets were run until they failed. The cost-efficient, wireless ABB Ability™ Smart Sensor allows customers to monitor the condition of entire asset fleets, moving from break/fix to predictive maintenance.

¹ Emil Berthelsen, Market Trends: Predictive Maintenance Drives IoT in Manufacturing Operations, Gartner, 13 February 2018



An optimal solution is to leverage secure, robust IT infrastructure that is already deployed in a plant to capture machine status from OT sensors. A dual-use IT/OT network is more economical and has the advantage of eliminating the need for dedicated gateways.



Figure 1: Motors fitted with ABB Ability™ Smart Sensors

BETTER TOGETHER

Aruba and ABB have partnered to enable Aruba indoor, outdoor, and Hazloc Ex explosion-proof multi-radio access points to securely collect and forward ABB Ability™ Smart Sensor data to the ABB Ability™ Condition Monitoring application. Using Aruba zero trust infrastructure as an OT data collection platform provides uniform security and visibility across both IT and OT domains. It also eliminates the costs and security risks associated with large fleets of gateways.

Dynamic segmentation is maintained throughout the Aruba switch fabric and ensures that data only flow to their intended destination. This protects the sensor system against attack, and the rest of the network against compromised devices.

Aruba’s “colorless” switch solution automatically establishes the correct secure connections, regardless of the port into which an access point or other device is connected. This feature simplifies system deployment by eliminating miswiring during adds, moves and changes to the plant.

UNIQUE VALUE PROPOSITION

The joint solution delivers the operational visibility and robustness demanded by COOs, without the expense of a traditional wired OT sensor system. Wireless communication allows Ability Smart Sensors to be deployed anywhere, including Ex Hazloc areas, without expensive conduit or enclosures. These savings multiply during plant changeouts because adds, moves, and changes are just as easy and inexpensive.

The intersection between OT and IT has historically been a point of friction, but not so with the ABB-Aruba joint solution. Both companies are respected leaders in OT and IT, respectively, and the joint integration allows data to flow reliably and securely across the OT/IT divide. OT visibility and robust design address the uptime concerns of COOs, while I/O-to-application security and policy management meet CISOs’ requirements. And the cost savings will cheer CFOs.

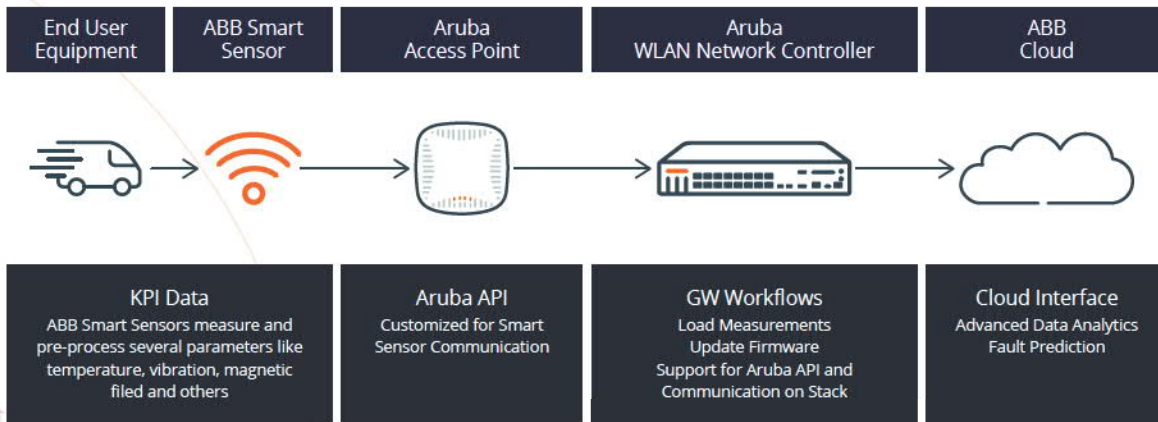


Figure 2: Aruba & ABB joint solution diagram



Finally, the joint solution is supported worldwide by ABB and Aruba. Multinational companies can qualify the solution once and have the confidence it will be available anywhere they need to deploy.

CERTIFIED INTEROPERABLE

We've taken the guesswork out of predictive maintenance by certifying interoperability between the Ability Smart Sensor and Aruba wireless infrastructure. Set-up is a breeze, and joint deployments go in faster and are easier to maintain.

SUMMARY

Aruba's secure infrastructure is the ideal way to support ABB Ability Smart Sensors in applications of any size. Contact your local sales representative to see how together Aruba and ABB deliver the most cost-effective predictive maintenance solution in the industry.

To learn more about Aruba wireless, please visit:
www.arubanetworks.com/products/networking/access-points/

DEPEND ON ABB



ABB is a technology leader that is driving the digital transformation of industries. With a history of innovation spanning more than 130 years, ABB has four, customer-focused, globally leading businesses: Electrification, Industrial Automation, Motion, and Robotics & Discrete Automation, supported by the ABB Ability™ digital platform.

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