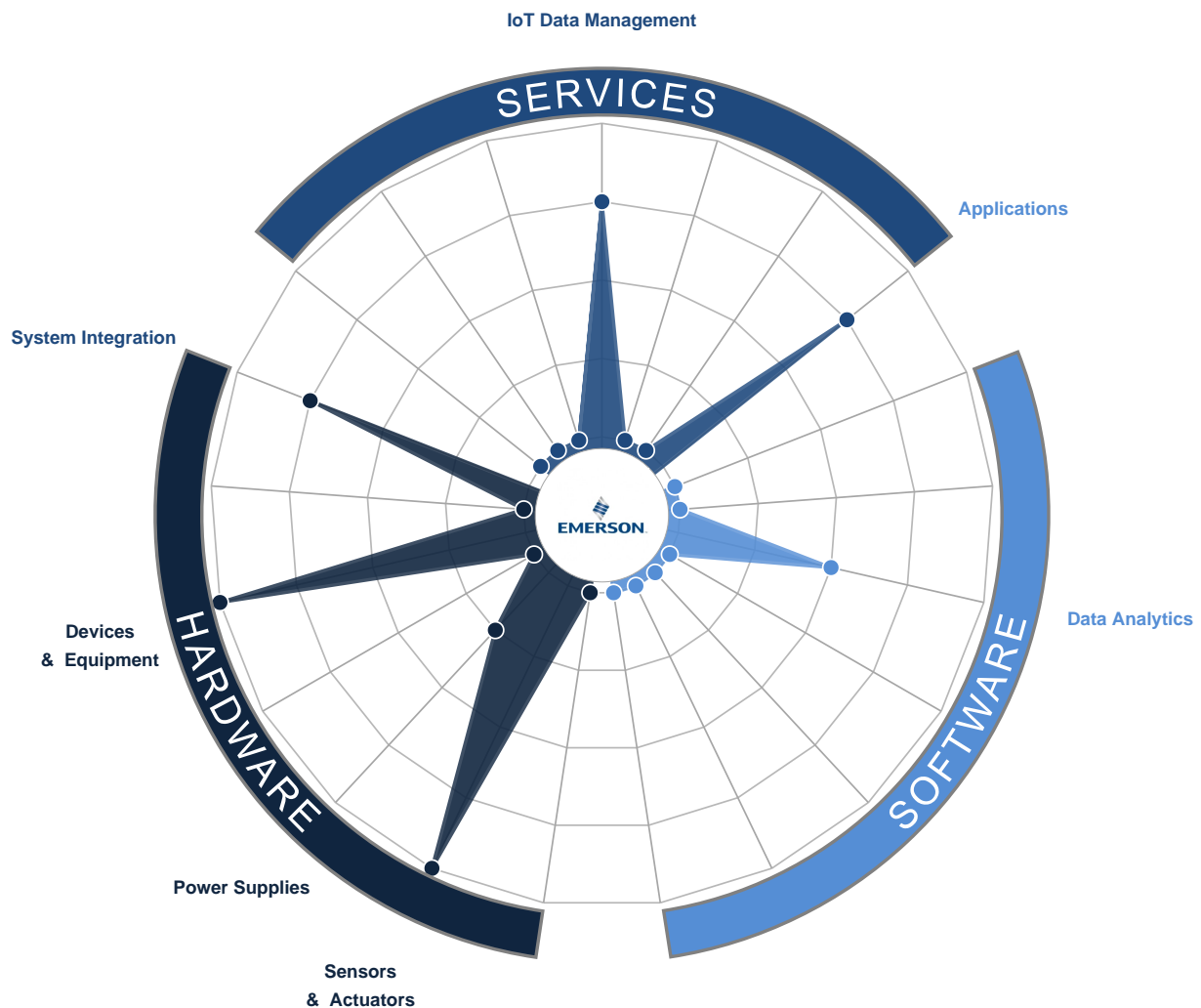


Advanced Elastomer Systems Upgrades Production



Overview

Applicable Industries



Chemicals



Plastics & Rubber

Applicable Functions



Maintenance



Information Technology



Production - Manufacturing

Connectivity Protocols



6LoWPAN



IPv6



Other frequency

Other Frequency

Fieldbus

Challenge

In order to maintain its share of the international market for thermoplastic elastomers AES recently expanded its Florida plant by adding a new production line. While the existing lines were operating satisfactorily using a PROVIX distributed control system with traditional analog I/O, AES wanted advanced technology on the new line for greater economy, efficiency, and reliability.

AES officials were anxious to get this line into production to meet incoming orders, but two hurricanes slowed construction.

Customer

Advanced Elastomer Systems (AES), is an ExxonMobil Chemical affiliated company and a major producer of thermoplastic elastomers.

Solution

Some lost time was recovered through the advanced control technologies selected

to take advantage of the installation efficiencies of bus architecture. A fieldbus network simplified installation and reduced overall wiring costs by approximately 15%. And instruments arrived configured and network-ready.

During commissioning and startup phases, AES saved significant time by using Emerson's Intelligent Device Manager predictive maintenance software to communicate with the field instruments. During commissioning, a single technician could query each instrument directly from the control room, confirm that device's functionality with an observer in the field, and move on to another device without opening instrument covers.

If the condition of a device or associated equipment changes beyond predetermined limits, a Status Alert indicates the problem to line operators. The real, actionable information makes device maintenance easier.

Hardware Components

- PROVOX distributed control system (with traditional analog I/O)
- FOUNDATION fieldbus network
- Rosemount instruments

Software Components

- DeltaV digital automation system
- AMS Suite Intelligent Device Manager (for predictive maintenance)

Data Collected	Real-time instrument diagnostics
Solution Type	M2M
Solution Maturity	Mature (technology has been on the market for > 5 years)

Operational Impact



Impact #1

Equipment Status Alert - Problems are indicated to line operators when the condition of a device or associated equipment changes beyond predetermined limits.



Impact #2

Remote Device Diagnostics - Real-time status reports enable maintenance

personnel to remotely diagnose the status of a device.



Impact #3

Installation Efficiency - Technicians are able to query instruments remotely during commissioning to confirm device functionality.

Quantitative Benefit



Benefit #1

The Foundation fieldbus network eliminated reduced overall wiring costs by 15%.



Benefit #2

The time required to install and commission 300 smart field devices was shortened by 3 weeks.



Benefit #3

75% in installation and commissioning times were 75% shorter than with traditional technologies.

Advanced Elastomer Systems Upgrades Production Through Smart Instruments and Predictive Maintenance



RESULTS

- 75% reduction in installation and commissioning time
- 15% reduction in wiring costs
- Completed loop checkout in "record time"
- Greater equipment availability, more reliable production, maximum output



APPLICATION

Approximately 300 smart field instruments were installed on a new thermoplastic elastomer (TPE) production line in Cantonment, Florida, utilizing the PlantWeb® digital plant architecture.

CUSTOMER

Advanced Elastomer Systems, L.P. (AES), an ExxonMobil Chemical affiliated company headquartered in Akron, Ohio, is a major producer of thermoplastic elastomers and a top supplier worldwide.

CHALLENGE

Global demand is growing for this type of thermoplastic, which is similar in functionality to conventional thermoset rubber products. However, TPEs can be processed with the speed, efficiency, and economy of thermoplastics. In order to maintain its share of the international market for TPEs, AES recently expanded its Florida plant by adding a new production line.

While the existing lines were operating satisfactorily using a PROVOX® distributed control system with traditional analog I/O, AES wanted advanced technology on the new line for greater economy, efficiency, and reliability. Corporate officials were anxious to get this line into production to meet incoming orders, but two hurricanes, including Hurricane Katrina, which struck the Gulf Coast in 2005, slowed construction.

"The PlantWeb architecture worked well from the very beginning. There have been no calibration issues, and it has exceeded AES' expectations. In fact, the fieldbus network has been great to work with, due in large part to the versatility and flexibility of AMS Device Manager."

David DeBari
Senior Process Engineer,
Advanced Elastomer Systems



For more information:
www.assetweb.com



SOLUTION

Some of the lost time was recovered through the advanced control technologies selected to take advantage of the installation efficiencies of bus architecture. According to Senior Process Engineer David DeBari, "A FOUNDATION™ fieldbus network eliminated the jumble of wiring and large junction boxes of a traditional DCS and reduced overall wiring costs by approximately 15 percent."

The Rosemount® instruments arrived already configured and network-ready. They were installed with a DeltaV™ digital automation system. During commissioning and startup phases, AES saved significant time by using Emerson's AMS® Suite: Intelligent Device Manager predictive maintenance software to communicate with the field instruments.

This digital approach yielded additional benefits during the commissioning, startup, and operational phases. During commissioning, a single technician could query each instrument directly from the control room, confirm that device's functionality with an observer in the field, and move on to another device without opening instrument covers or looking at "a jumble of wiring" in an I/O cabinet. The time required to install and commission 300 smart field devices was shortened by approximately three weeks.

DeBari said, "Fewer AES technicians were able to complete loop checkout in record time, as a result."

Since startup, the AMS Device Manager has enabled plant personnel to monitor the diagnostic capabilities of the intelligent field instruments. If the condition of a device or associated equipment changes beyond predetermined limits, a Status Alert indicates the problem to line operators. Frequently, maintenance personnel can determine directly from the interface whether a device is reporting correctly and if not, why. The ability to view device status and diagnostics sets this technology apart from traditional, process-of-elimination troubleshooting procedures. The real, actionable information makes device maintenance easier. Equipment availability is greater, production is more reliable, and output is maximized – helping to achieve AES's objectives for the new line.

"The maintenance technicians are very impressed with this technology."

David DeBari

Senior Process Engineer,
Advanced Elastomer Systems

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AMS Suite: Intelligent Device Manager powers PlantWeb through predictive and proactive maintenance of intelligent field devices to improve availability and performance





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