

PAS Improves Operations and Automation Effectiveness

By Tom Fiske

Summary

PAS provides Operations and Automation Effectiveness solutions to the process industries. PAS improves operations effectiveness by maximizing

Operators and automation systems play an important role in extracting value from assets. Achieving a high-level of performance requires astute operator situation awareness and highly effective automation systems. Attaining this performance is not easy due to increasing number and complexity of disparate plant systems.

PAS provides Operations and Automation Effectiveness solutions to address these issues. PAS' Integrity solution maps the plant Automation Genome enabling knowledge retention, collaboration, and timely and better decision-making. PAS' Operations Effectiveness solutions enable improved operator performance through comprehensive alarm management, control loop optimization, and properly designed operator interfaces.

operators' situational awareness; enabling them to take the most beneficial actions during both steady state operations and abnormal situations. PAS' Integrity software improves automation effectiveness by mapping and managing configuration for the ever-increasing number of complex and disparate systems, measurements, and applications found in a plant (Automation Genome™). This makes it easy to identify defects within users' system configuration settings and to track changes and display modifications.

In today's dynamic business environment, an organization's knowledge base composes a substantial part of its sustainable competitive advantage. PAS' Integrity software also provides a platform for capturing tacit knowledge and making it accessible to operators, engineers, and other plant personnel. This ensures experiential knowledge, which ordinarily would only be known to one person, is captured and made available to everyone who needs it.

Keeping Pace with Constant Change

You've heard the expression, "the only constant is change," many times before. This has never been more true than in the context of today's global economy and manufacturing environment. Sometimes, change is gradual and at other times, rapid, but companies that are best able to adapt to change, are the ones that continue to thrive.



Adaptive companies create highly effective assets through increased agility and flawless execution. An automation system is an essential component to efficient, flexible, reliable, and safe operations. These heterogeneous systems consist of a collection of distributed devices and software applications connected by means of a communication network. The automation system is responsible for process monitoring and control along with performing production management and reporting functions. The current trend for automation is toward dramatically increased complexity and interoperability. Maintaining the integrity of these large, complex systems is more challenging than ever, but also necessary for improving operational effectiveness.

Knowledge Retention Is Key to Operations Success

In today's dynamic business environment, an organization's knowledge base composes a substantial part of its sustainable competitive advantage and contributes significantly toward its ability to improve operational effectiveness. Unfortunately, most companies today face the bleak realization that a large portion of its workforce is approaching retirement age. Already, companies find it difficult to replace their departing skilled labor with individuals that have comparable skills. In many cases, they will not be able to replace them at all. The loss of intrinsic process knowledge and production know-how from the retirement of plant workers poses a real threat to safe and profitable operations of manufacturing plants. Companies must not only capture and reuse knowledge of their existing workforce, but must also find ways to transfer that knowledge to the next generation of workers if they are to remain competitive.

PAS provides Operations and Automation Effectiveness solutions that help companies improve performance and manage their knowledge. Established in 1993, the company offers software and engineering services in a variety of process industries, including oil & gas, refining, power generation, metals & mining, and pulp & paper. Due to its origin as a system integrator, PAS has extensive knowledge of automation systems and how to manage them, as well as a wide breadth of process operations knowledge in a number of industries. Many of PAS' employees are from the end-user community and 83 percent of its engineers have operations experience. Key strategic partners of PAS include Honeywell, Invensys, Intergraph, and Yamatake. PAS has a global presence with offices in eight countries.

PAS Focus Is on Improving Operational Effectiveness

Operations Effectiveness, which is focused primarily on enabling the plant operator to be successful during the course of a shift, is one aspect of PAS' business. PAS improves operator performance during both steady-state and abnormal situations by improving situational awareness and enabling better actions to be taken. This is accomplished through effective alarm management, optimized control loop performance, and the design and implementation of high-performance human-machine interfaces. By implementing these solutions, plant stability, safety, and reliability are improved, and operator fatigue is reduced.

PAS Enables Automation Effectiveness

The second aspect of PAS' business is Automation Effectiveness. Automation in today's plants is a complex mix of disparate systems, measurements, and applications, which often interact in unique ways. As the level of interoperability among systems, the number of integrated measurements, and the number of applications all increase, the automation genome of the plant becomes incredibly complex. The term, "Automation Genome," describes the collective configurations within and among all automation systems in a plant. Mapping and managing changes to this dynamic complexity is untenable without assistance. PAS' Integrity Software maps the genome of more than 40 different automation systems (DCSs, PLCs, historians, advanced controls, and instrumentation databases), and is able to aggregate and contextualize complex configuration, and simplify their management, allowing users to identify defects within their system configuration, as well as track and display modifications (MOC).

Integrity Aids in the Capture and Reuse of Knowledge

A significant concern facing the process industries today is the loss of knowledge workers as the workforce ages. PAS' Integrity software provides a platform for capturing tacit knowledge, contextualizing it, and making it accessible from the operator console where plant personnel work. This ensures that experiential knowledge, which ordinarily would only be known to one person, is captured and made available to everyone who needs it. Integrity includes a Plant Wiki that allows users to add, edit, and contribute to plant knowledge. It also provides the ability to incorporate electronic media files into the knowledge base and search for relevant plant information in external files such as spreadsheets, documents, and e-mails.

Managing Evolving Plant Genome and Automation Migration

Integrity's unique mapping capabilities significantly reduce migration and systems integration project time, rework, and time spent on factory acceptance testing (FAT). For these reasons, the project delivery organization at Invensys Operations Management (IOM) has standardized on PAS' Integrity software to facilitate automation system deliveries worldwide. Before choosing Integrity as its standard, IOM conducted an extensive nine-month pilot to prove the benefits. Depending upon the size and complexity of the project, Integrity can reduce the number of engineering man-hours employed by 3 to 10 percent. In an increasingly competitive environment, Integrity provides companies with a distinct advantage.

Last Word

In a constantly changing business and manufacturing climate, improving operations and automation effectiveness is becoming an imperative for companies to make their products safely, efficiently and at the lowest cost. Operators play a very important part in achieving a high-level of operations effectiveness. Alarms are an integral part of the tool set used by operators. Along with the control system, alarms provide early warning of emerging abnormal operations. Improving operations effectiveness requires an effective alarm and control loop performance management strategy. Since its inception, PAS has engaged in developing of Operations and Automation Effectiveness solutions and is one of the leading suppliers in this area.

In addition, companies must maintain the integrity of their automation systems to ensure optimum asset performance and create a competitive advantage. ARC recommends users adopt an automation configuration management strategy to safeguard their process automation systems and reduce their risk of lost production, unscheduled downtime, or worse.

ARC also recommends a corporate automation knowledge retention strategy to capture, protect, and share the significant engineering investment in the automation assets that are vital to plant operations and safety.

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