

CPAS 3.0 for the 21st Century

THE FUTURE OF THE COLLABORATIVE PROCESS AUTOMATION SYSTEM

MODERN PROCESS AUTOMATION OFFERS MORE THAN CONTROL

Owner-operators in today's process industries require automation systems that can help maximize their return on assets to achieve business advantage, while reducing the cost and effort required to operate safely, securely, and reliably. CPAS, the Collaborative Process Automation System, is ARC's vision of such a system.

ARC introduced the CPAS concept over a decade ago in response to requests from several large, well-known owner-operators that were having difficulty evaluating the capabilities of the then-current Distributed Control Systems (DCS) to meet their evolving business requirements. ARC concluded that the problems were not insurmountable, nor were they technology-constrained. In fact, most of the functionality required had already been developed, with much of it commercially available

— just not from a single automation supplier.

This new CPAS 3.0 report provides an updated explanation of the guiding principles behind CPAS, the architecture, key enabling technologies and standards, and — most importantly — the business-enhancing applications that provide the core CPAS benefits. ARC has also updated the report to reflect new requirements, as well as new enabling technologies and standards that have emerged since the last update to the report. We also provide a vision of where we see CPAS headed.

ARC designed this report to be a strategic guide for both owner-operators and process automation system suppliers.

For more information, please visit us at www.arcweb.com/market-studies/.

STRATEGIC ISSUES

Process automation users and suppliers alike have a lot at stake. Users want to be able to develop their own unique competitive advantage, while suppliers look to preserve and increase their installed base. This report answers strategic questions such as:

- Where are process automation systems heading?
- How do new trends such as Cloud, Industrial Internet of Things, and Big Data analytics impact automation?
- What does CPAS look like?
- How does CPAS contribute to the enterprise value chain?
- What standards and technology will bring current system to true CPAS?
- How does CPAS 3.0 address today's increased cyber security risks addressed?

STUDY CONTENTS

EXECUTIVE SUMMARY

Scope, Vision and Views
CPAS Application Levels
Standards and Technologies
Where Is CPAS Headed?

PROCESS INDUSTRIES CHALLENGES

What Is Process Manufacturing?
Top 10 Business Challenges

CPAS OVERVIEW

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Guiding Principles
Core Functionality

COMPONENTS AND STRUCTURE

Field Instruments
Controllers and Software
Electrical and Automation Integration
Safety and Control
Cyber Security
Operations Management Applications
Enterprise to Operations Integration

SYSTEM LIFECYCLE MANAGEMENT

Supplier Selection
Multiple Supplier Management
Software Validation
Establishing the Base for CPAS
Asset Lifecycle Management
Organization for CPAS

Automation Asset Management
Aging Installed Base
Reliability and Sustainability
Managing the Installed Base
Upgrading and Migration
Building Successful Vendor Support
Agreements
The Changing Workforce

STANDARDS

The Value of Standards

Internet Technologies
Process Automation Standards
Digital Fieldbuses

WHERE IS CPAS HEADED?

Smart Field Devices
Real Distributed Control
On-Line Version Upgrades
Unify Business and Manufacturing
Application Executive of the Future

