PlantPAx System Overview

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This session is an introduction to the PlantPAx Process Automation System:

- Review of PlantPAx System capabilities
- Examples of PlantPAx System applications
- Summary of PlantPAx System benefits
- Where to go for more information
Manufacturing Challenges

Globalization, Sustainability, Productivity, Innovation
New pressures are driving manufacturers across their enterprise on **continuous improvement** at all stages of the plant lifecycle.

Manufacturers today must **leverage** their **automation investment** to create an architecture for continuous optimization.

### Maximize Return on Assets
- Risk Mitigation
- Time To Market
- Supply Chain Efficiency
- Globalizing Footprint
- Demand Forecasting

### Flexible Operations
- Asset Efficiency
- Cost Management
- Production Intelligence
- Utilization
- Quality, Yield, Productivity

### Innovative engineering
- Decision Support
- Advanced Process Control
- Design Productivity
- Total Lifecycle cost
- Global/Local Standards

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PlantPAx Process Automation System

Protection of plant personnel

...equipment

...production

...and the environment

Scalable high availability throughout the architecture

• Protect only what you need without over-investing
• Focused not only on availability and uptime, but also maintainability

Information-based solution for operations productivity

• Decision support, production analysis, and optimization drive profitability

Plant-wide control, performance tuned for process applications

• Standards-based architecture enables multi-disciplined control
• Extends EtherNet/IP as control backbone

PlantPAx: Plant-wide optimization solution for the process industries

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Control and I/O Portfolio

Scalable Controller Portfolio
... From ten loops to hundreds per controller

Robust Network Infrastructure
... CISCO technology and EtherNet/IP with redundancy options at every level

Comprehensive Integration
... The broadest range of traditional I/O and intelligent devices

Modern infrastructure via the most cost effective design
Operator Efficiency

Integrated Visualization
... Intuitive displays, objects, and faceplates with integrated diagnostics

Decision Support Tools
... Dashboards help identify opportunities for continuous improvement

Scalable Architecture
... Solutions for on-process, mobile, and stand-alone applications up to large distributed systems—deployed traditionally or virtualized

Operators should spend their time controlling the plant, not being distracted by the control system

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Engineering and Configuration

Consolidated Deployment Tools
... Comprehensive system configuration environment and tools for library management and bulk system engineering

Modular Object Library
... Predefined logic and HMI objects shorten development and testing time

Defined System Architectures
... Minimizes risk of mid-sized systems and ensures system performance

Shorten development time and minimize human error

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Ensure process uptime via asset performance management and predictive maintenance

Asset Management and System Maintenance

Valves and Instrumentation
...Comprehensive management enabled by industry standards

Devices
...Intelligent drives and MCCs as native system components

Operator: “Is it OK?”
Maint: “How bad is it?”
Tech: “How do I fix it?”
Intelligent Motor Control

Control | Communicate | Protect

- Variable speed AC drives
- Packaged & pre-engineered solutions
- LV and MV motor control solutions
- Asset management

- Electronic overload protection relays
- Soft starters
- Condition monitoring

Supporting capital investments long term
Safety and Critical Control

High Availability Process Control
... High availability solutions from redundant I/O to redundant controllers, resilient networks to redundant HMI servers

Scalable Process Safety
... Integrated BPCS and scalable SIS solutions, including TMR for the highest availability

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<th>SIL 0 Process Control</th>
<th>SIL 1 Fail Safe</th>
<th>SIL 2 Fail Safe</th>
<th>SIL 2 Fault Tolerant</th>
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Risk reduction by protecting only critical assets

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Integrated Analysis Tools
... Batch reports, material usage, genealogy, and solutions to optimize batch production

Native ISA-88 Structure
... Simplify change management and regulatory compliance

Scalable Platform
... From simple, single unit scale to highly complex, integrated batch solutions

Flexibility to respond to external pressures - regulatory compliance, yield optimization, production agility
Operations Productivity

Scalable Data Collection
... Chassis-based, plant-wide or enterprise-wide historian

Decision Support Portal
... Track production KPIs to manage cost, quality, resources

Actionable information in the hands of decision makers

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Process Optimization

Broad Advanced Control Portfolio
... From simple model-based control to fuzzy logic, soft sensors to complex model predictive control

Flexible Deployment
... From loop and unit-level optimization in the controller to plant-wide economic optimization at the supervisory layer

Proven economic gains - increase production, reduce costs, improve quality, reduce environmental risks

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Industrial Security

Reduce Risks to Safe and Reliable Operation
...Control system architecture with layered security to help maintain operational integrity under threat

Protect Assets & Information
...Product and system features to help control access, tamper-proof and limit information exposure

Government and Standards Alignment
...Responsible disclosure with control system solutions that follow global standards and help fulfill independent & regulatory security requirements

Address risk to helps protect people, assets and information from accidental and malicious threats.

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Lifecycle Support: Protect Your Investment

On-Site and Managed Service:
- Application Support
- Integrated Parts & Labor Services

Continuous Remote Monitoring and 24x7 Support:
- System-level Support
- Disaster Recovery

System Training:
- Instructor-led
- On-site
- Assessments

Process Device Management:
- Device Calibration
- Field Device Integration & Asset Management
- Spare Parts Management

Consulting Services:
- Safety & Energy
- Network & Security
- System Migration

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Consumer-Driven Industries

True Plant-Wide Control ... Drives total cost of ownership savings
Continuous Improvement ... Provides plant-wide manufacturing intelligence
OEM Scalability ... Cost effective in skid integration

Total Cost of Ownership (TCO) savings and continuous process improvements

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Life Sciences
New Active Pharmaceutical Ingredient Plant

Application:
- Primary (API) production plant

Solution:
- Recipe-based operation & EBR
- Workflow automation
- Design, engineering, startup and operator training

Technology:
- PlantPAx DCS
- FactoryTalk PharmaSuite (MES)

PlantPAx batch control & MES integration for production flexibility

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Resource-Driven Industries

Optimized approaches for engineering, operations and maintenance

High Availability ... Ensures uptime and safe operation

Operational Excellence ... Provides critical asset performance information

Sustainability ... Reduces cost associated with W.A.G.E.S.
**Water:**
DCS migration for water authority

**Application:**
- Complete upgrade of a water purification plant

**Solution:**
- Controls for filter beds, fluoride and pumping
- Design, engineering, startup and operator training

**Technology:**
- PlantPAx DCS
- Smart instruments

Commissioned without interruption in city water supply
Pulp & Paper:
DCS migration for paper mill

Application:
• Stock prep
• Paper machine control

Solution:
• Process and power control
• Network design
• Design, engineering, startup and operator training

Technology:
• PlantPAx DCS
• MV Drives, MCC

US$5 million CapEx reduction for plant reconfiguration
Driving Differentiation

Plant-wide Control and Optimization
... Process, Power, Information and Safety
... Enables vendor rationalization (lowers total cost)
... Real-time information for continuous improvement
... Scalable across applications, operations and environments

Lower Total Cost of Ownership
... Common plant platform - reduced downtime
... Lower IT integration costs
... Reduce operator error and training costs
... Lower licensing renewal costs

Unified IT Infrastructure
... Easy plug-in to EtherNet/IP
... Information enable for decision support
... Cisco partnership and standards
... IT friendly (decision partner for large projects)

OEM Scalable
... DCS-compliant, easy integration of skids to DCS
... Supports multi-vendor integration in projects
... Cost-effective in design, development and deployment
... Rapid field device integration

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Where to find more information

**PlantPAx Selection Guide (Proces-SG001)**
- Assist with system definition and procurement
- Ties in with PSE and Characterization
- **Defines how to procure a system for optimal performance**

**PlantPAx Reference Manual (Proces-RM001)**
- Concentrates on the implementation recommendations that apply to all PlantPAx Systems
- **Defines how to configure a system for optimal performance**

**PlantPAx TOC on KnowledgeBase: 62366**
Customer Voice - Thank you!!!
Questions?