T73 - PlantPAx System 4.5
What’s New
Quick Summary of Features

SMART
• Intelligent Packaged Power
• New standard control panels
• Updated design software

PRODUCTIVE
• Improved maintenance and system health tools
• Updated visualization and trending aligned with ISA 101
• Enhanced alarming and batch management interfaces

PROTECTED
• New highly available network options
• New controlled access for operations based on roles & responsibilities
• Enhanced guidance for Enterprise-Ready Architectures
## Process Roadmap Plan

<table>
<thead>
<tr>
<th>Product</th>
<th>What are we doing</th>
<th>Why are we doing it</th>
<th>Target AFC</th>
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| PlantPAx System 4.5                                       | • New release of our DCS platform  
• OS: Server 2012 / Windows 10  
• Product releases include:  
  • FactoryTalk View SE 10  
  • Logix Firmware v31.050 (5570)  
  • FactoryTalk Batch 13 | • Improved high availability Ethernet/IP architectures  
• Support requirements of larger projects including user defined roles by operator and plant areas, HMI redundancy improvements, improved sizing model, and expanded network guidance to include the connected enterprise | July 2018  |
| Rockwell Automation Library of Process Objects 4.0       | • Major release of Rockwell Automation Library of process objects                | • Modernize faceplates aligning with industry best practice and RA product UX design  
• New security model enabling user defined roles by operator and plant area  
• Adopt latest FT View capabilities such as decimal point positioning and improved audit logging | July 2018  |
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<tr>
<td>FactoryTalk Batch 13</td>
<td>• Modernization of operator interface graphics and language switching&lt;br&gt;• Integration of SequenceManager™ promotes unit level control in Logix (UOP) or the Batch server.&lt;br&gt;• Improved editing and managing of versioned recipes with find feature&lt;br&gt;• Improved database management&lt;br&gt;• MES Integration (Production Center) API&lt;br&gt;• Recipe Parameter and Reports</td>
<td>• Support for mobile devices ensures quick response by proper users/roles&lt;br&gt;• Eases integration between server and controller-based OEM skids&lt;br&gt;• Faster time-to-market for product changes&lt;br&gt;• Improved system availability for reporting and restoration activities</td>
<td>Released</td>
</tr>
<tr>
<td>Factory Talk Batch V14</td>
<td>• Recipe Formulations &amp; Online Area Model&lt;br&gt;• FactoryTalk Linx adoption&lt;br&gt;• Win Svr 2016 support</td>
<td>• New User experience</td>
<td>CY19</td>
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| FactoryTalk Batch View V1.00 | • New web server technology to provide real time interface to batch server (HTML5)  
• Scalable graphics to fit any device  
• Single source for new ViewSE user controls and Mobile Devices | • Ensures quick response by proper roles to keep production running.  
• Can be installed to modernize HMI for existing customers  
• Provides modern architecture for easier product evolution | Released |
| FactoryTalk Batch View V2 (1.01) | • Include Equipment View  
• eProcedure Update | • Provides view of process by equipment  
• Allows for integration of manual work procedures on a modern platform | Released |
| FactoryTalk Batch View V3 (1.02) | • eProcedure Equipment View  
• Manual Phase Control  
• Minimal view (banners)  
• Connections to reports  
• Forcing of Transitions | • Provides view of manual procedures by equipment  
• Enables operator control of abnormal conditions for faster MTTR  
• Simplifies ability to see results for simplified decision making | Released |
| FactoryTalk Batch View V4 | • Build in Formulation control  
• Additional Enhancements  
• Arbitration and binding | • Coordinated with Batch v14 to adopt latest capabilities  
• Provides full functionality of older Batch View ActiveX | CY19 |
The Modern DCS

**PLANT-WIDE**

**SCALABLE**

**OPEN**

**FLEXIBLE**

System Release 4.5

**SMART**

**PRODUCTIVE**

**PROTECTED**

- **SMART**: System capabilities to simplify design and configuration
- **PRODUCTIVE**: Intuitive design and user experience for more productive operations
- **PROTECTED**: Standards driven approach aligned with enterprise policies

RELEASE TARGET: JULY 2018
Overview
Consolidated servers into a single machine for systems up to 2,000 I/O
• Delivered as a single ISO installer
• Can be used on virtual or physical machine
• Compatible with other server-based system elements
• Server functions can be segregated as system needs grow

Benefits
• Right-sizes infrastructure while delivering full functionality to reduce cost
• Identical capabilities between small and large systems ensuring your system is scalable with your operations
• Single license and installer simplifies ordering and implementation costs
New standard control panel offerings

Overview
New standard control panel offerings for PlantPAx Systems
• Standard design panels built to order
• Two ways to order:
  • Basic provides pre-designed panel that can be populated in the field
  • Configured provides pre populated panel that is done at the factory.
• Includes drawings and documentation

Benefits
• Standard designs reducing project costs and risk
• Simple to budget and simple to order
• Reduced time to market with shorter delivery times than custom panels
RA Library for Electrical Protection Devices

Overview
Library of objects to integrate electrical protection devices
• Includes objects for RA, SEL, and ABB protection devices
• Communicates either IEC-61850 or via Ethernet/IP
• Includes instructions for deployment

Benefits
• Monitor and control electrical distribution systems with one common platform to reduce deployment and cost of ownership
PlantPAX® System Estimator updates

Release information subject to change

Overview

Updated PlantPAX System Estimator improving support for larger systems and latest capabilities

- Allows user to select scope of OWS to improve data server sizing
- Ability to add thin clients or access points to the network
- Added ThinManager and OS licensing options
- Better alignment of system tree, network, and BOM for virtualized systems

Benefits

- More flexibility for improved sizing of large systems
- Complete alignment with latest software and reference architectures
- Improved integration with the network planning tool within IAB
Redundant PASS Server Enhancements

Overview
Enhanced management of PASS Server redundancy:
• Automatic copy from primary to secondary server at initial creation
• Ability to replicate active to standby, even in the active server is the secondary server
• Services automatically restart after replication w/o reboot
• Project edits automatically saved to both servers
• Ability to force failover programmatically via command or in View Studio
• Built-in display of redundancy status at runtime as a function or display status
• Improved FTA&E uptime and alarm annunciation behavior during redundancy change over events

Benefits
• Simplified management of redundant PASS servers
• Simplified design experience for reduced chance of error

Release information subject to change
Device Integration for EtherNet/IP Devices
New DTM support for EtherNet/IP Process Instrumentation

Overview
• Communications Device Type Manager (DTM) bridging EtherNet/IP capable process devices to hosting Field Device Tool (FDT) applications
• Compatible with FactoryTalk® AssetCentre and Endress + Hauser FieldCare software products
• Coexists with the existing Rockwell Automation portfolio of modules DTM, which are required for HART, FF and PA process devices
• Leverages Rockwell Automation communications software products
• Users can choose to use RSLinx® Classic or FactoryTalk® Linx™
• Free of charge – available now from PCDC

Benefits
• Delivers a modern, easy-to-use communications solution for customers adopting EtherNet/IP based process instruments
• Improved user experience
Overview
Usability enhancements to Studio 5000 Logix Designer®
• Common look and feel across all Studio 5000® applications
• Modernization of programming language editors
• Improved workflows for multi-monitors, tabbed views, quick navigation
• Clearly convey state and identification of errors

Benefits
• Improved design experience
• Simplified debugging and troubleshooting
Overview
Usability enhancements to the Function Block Diagram Editor
• More clearly identification of coding errors
• Ability to modify operand values from the FBD
• Ability to force I/O values from the FBD
• Ability to change sheet sizes and reorder sheets online
• Ability to invert a Boolean connection without additional instructions
• Smaller block representations
• Improved routing algorithm

Benefits
• Improved design experience
• Simplified debugging and troubleshooting
New Structured Text Editor

Overview
New Structured Test Editor within Studio 5000 Logix Designer:
- Line numbers and syntax highlighting
- Collapsible code segments
- User definable code segments
- Ability to bookmark code
- Change and verify bars
- Inline value monitoring
- Clear identification of code errors
- Can be used within SFC code

Benefits
- Improved design experience
- Simplified debugging and troubleshooting
**OPC UA Connector for FT Live Data**

**Overview**
- New connector adds OPC® UA communications to FactoryTalk® Live Data
- OPC UA data definitions merged into FactoryTalk® Live Data namespace
- TCP data exchange eliminates DCOM

**Benefits**
- Nothing new to buy / just upgrade to FactoryTalk® Services Platform v3.00
- Permits FactoryTalk® Software to interface with 3rd party data servers
- More productive system namespace browsing
- Enhanced security and stability

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**FactoryTalk® Linx™ OPC UA Connector**

**System**

- **4.5**

**3rd Party OPC UA Server**

**Smart**

- Productive
- Protected
**Overview**

- FactoryTalk® Linx™ Gateway adds ability to server data to OPC UA clients
- Uses FactoryTalk® Linx™ high performance, distributed & redundant server capabilities within the PlantPAx System
- Browse service to deliver controller data definitions to external OPC Clients
- OPC UA uses TCP vs. DCOM in OPC DA

**Benefits**

- Included with new version for existing owners of FactoryTalk® Gateway
- Scalable from a single station to large multi-server and high availability systems
- Provides 3rd party software high speed access to Rockwell Automation controllers
- TCP enhances capacity and stability
New ControlFLASH Plus™ Functionality
Improved, Productivity, Usability and Scalability

New generation firmware update tool
- Modern and simple to use for better firmware management
- Allows for managing firmware kits on system, browsing existing firmware across system and supporting multiple devices flash operations simultaneously
- Optional connectivity to Product Compatibility and Download Center (PCDC) targeted for R2
- Support for setting preferred firmware revisions for your plant that can be shared between stakeholders

Benefits
- Improves productivity by allowing shorter time to update multiple devices
- Easily apply firmware standards
- Can coexist with ControlFLASH

First release targeted for early 2018

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New Network Management Software

Overview

New easy-to-use network management software from Rockwell Automation, FactoryTalk® Network Manager™:
- Discovers plant floor network (EtherNet/IP and CIP™) and provides many enhanced topology views
- Provides real-time capture of alarms and events, configuration, backup, and export capabilities
- Allows for creation of configuration templates

Benefits

- More easily deploy, commission, and maintain your control system networks
- Simplifies management and troubleshooting activities
Overview
Adoption of PI Performance Monitor capabilities to collect PlantPAx system performance information:

- Server and workstation performance
- Controller and Data Server diagnostics
- Includes Event Frame templates aligned with System Element type

Benefits
- Improves troubleshooting capabilities by providing system performance data history
- Identifies excursions from recommended loading limits as events for simple review
- Simplifies use of the PlantPAx system checklist to ensure alignment to Rockwell Automation recommendations
Library of Process Objects

Overview
Simplified faceplate design aligned with HMI standards
- Minimized use of color outside of alarms
- Organization of content based on usability by role
- Standard look and feel aligned with new RA products

Benefits
- Lower tag count per faceplate for improved performance
- More intuitive operation
- Alignment with industry standards to reduce the cost of adoption
Overview
• Native integration of multi-monitor support within the FactoryTalk View client
• Configured in the client setup file
• Supports up to 6 monitors natively

Benefits
• Easy configuration of additional monitors on a per-client basis; saved in the .cli file
• Not dependent on the application
• Easy drag of content to different monitors
• Still uses a single client license and one .cli file
Overview

New data source added to TrendPro. Data Sources now include:

- Live Data
- View SE datalog data sources
- FactoryTalk Historian
- NEW! - FactoryTalk Alarms and Events – ability to add alarm history and display alarm events on trend

Benefits

- Optimized display of event information with real-time and historical data on the trend
- Easy to add both ad-hoc at runtime and design time
- Helps troubleshooting efforts
PI Asset Framework for Process Objects

Overview
Process Object historian templates extended with PI Asset Framework

- Elements and Event Frame templates provided as part of the Process Library Distribution.
- Take advantage of historian Elements Modeling organization and Analysis capabilities

Benefits
- Ensures access to contextual information directly from the historian for improved system robustness
- Drive continuous improvement by exposing process data as events to gain better insight leading to better decisions
Overview
• Pass-through login from ThinManager to view clients on OWS

Benefits
• Login once, even if multiple View clients are launched
Updated Batch Visualization

Overview
Modern and comprehensive batch visualization with consistent interfaces whether your are in the control room or connecting from your mobile device
• Manual operations and prompts listing by equipment view
• Added capabilities for manual phase control and forcing of transitions to allow operator to handle abnormal conditions
• New batch banners and simplified connections to reports to ensure data access for improved decision making

Benefits
• Better access to process and prompting for improved productivity
• More power to operations to handle abnormal conditions to reduce the chance of production loss
• Easier access to reporting for improved decision making to enable better decisions leading to productivity gains
Mobile Alarming Interface

Overview

• See alarms published to ViewPoint in an interface optimized for mobile devices
• Visual indication of active alarms which can be filtered or sorted
• Access to complete alarm details
• Acknowledgement or Shelving of alarms from ViewPoint web client
• Access controlled by FT Security settings

Benefits

• Operators and maintenance personnel do not have to be at an operator station to act on an alarm – they can take the alarm list with them!
• Responsive phone & tablet interface
• Complete alarm details
Overview

Ability to define access rights both by role and area

- Faceplates will use FactoryTalk Security
- FactoryTalk Security groups created for roles – Operator, Engineering, etc.
- Library object has configurable area prefix for area based security groups
- Requires FactoryTalk View 9 and later

Benefits

- Provides way to define access levels for different plant areas, simplifying design of larger systems
- Same security model used by rest of portfolio for simplified system management

Library of Process Objects
Access definitions by Role and Plant Areas

Domain
Users

Dale
Barb

Domain Groups

Area 1 Operators

Area 2 Operators

FactoryTalk Domain
Linked Groups

Area 1 Operator cmds
Area 1 Ack/Shelve Alarms
Area 1 Run Batches

Area 2 Operator cmds
Area 2 Ack/Shelve Alarms
Area 2 Run Batches

UserHasGroup (Area1 Operator cmds*)

“Area1” user defined in instruction
“Operator Cmds” defined by faceplate
PRP Network Support

Release information subject to change

Overview
New 1756 EtherNet adaptor supporting Parallel Redundancy Protocol (PRP)

- IEC 62439-3 compliant: same frame/packets sent out both ports
- Acts as an I/O scanner in controller chassis or I/O adapter in remote chassis
- Provides same performance and capacity as the 1756-EN2TR

Benefits
- Enables high availability network for I/O communications – helping to minimize risk of downtime
- Extends CPwE values to the I/O layer by leveraging standards-based redundancy
Redundant Shortcuts

Overview

New shortcut types for redundant path to a controller.

- Allows for two separate IP address and network paths between data server and controller
- V31.050 and later (March 2018), can also be used for redundancy instead of IP address switching

Benefits

- Enables high availability network for server communications for improved robustness
- Minimizes the impact caused by IP address switching of redundant controllers on the network
Expanded Network Guidance

Overview
Extending the PlantPAx Network and System guidelines,
• New coverage of wireless connection leveraging ThinManager
• Industrial Demilitarized Zone configuration enabling data flow to the enterprise following CPWE security standards.

Benefits
• Maximize operations productivity by leveraging SMEs in the extended organization by enabling access to the cloud
• Provides best practice reference for system design that permits the adoption of new system capabilities
Other System 4.5 Content

- Decimal point positioning by object
- Process Object Historical Trends
- Updated process object mode model
- Security Alignment and Deployment Guides
- ISA101 HMI Template, Style and Implementation Guide
- Updated Virtual Image Templates
- Online UDT member renaming

- Extended support from 50 to 80 OWS
- New Embedded Web Browser provided with FactoryTalk View
- RecipePro: Parameter table management native in FactoryTalk View
- Support for dynamic local message file in Message Display in FactoryTalk View
- Improved design software usability: FactoryTalk View Studio, Logix Designer, Studio 5000 Architect
PlantPAx System Release 4.5
PSUG Townhall Voting Priorities Addressed

✓ Redundant Ethernet
✓ Multi-monitor support
✓ Enhanced trend displays
✓ Function Block Diagram editor enhancements
✓ More online capabilities (FBD Sheet Size)
✓ Provide a tool for Process Object migrations
Thank You!