T69 - Modernizing Your HMI
Bringing Data to Life Through Visualization
“Modern HMI” at NASA

1960s  1980s  Today
HMI’s Evolving Role

HMI is the central point for decision-making in the manufacturing and industrial space.

- IT and OT Convergence
- Flexible Manufacturing
- Emerging technologies
A View for Every Scenario

Machine-Level Visualization
- FactoryTalk® View Machine Edition (ME) application
  - PanelView™ Plus 7 terminals
  - MobileView™ terminals
- Studio 5000 View Designer® Software
  - PanelView 5000 terminals

Scalable PC Based Visualization
- FactoryTalk View Site Edition (SE) application
  - Industrial Computers
  - Thin Clients
  - Monitors
  - Commercial Computers

Web-Based Visualization
- FactoryTalk ViewPoint application
- Add-on for Machine Edition and Site Edition
- Access HMI displays from a web browser
- Dashboard and report access
View 5000 Platform

- Optimized Logix Integration
- Extended Tag Properties
- Logix Based Alarms
- Scalable Vector Graphics
- Advanced Diagnostics
- Built in Navigation Menus
# What Is the FactoryTalk Platform?

FactoryTalk Services Platform = Common Services

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACTIVATION</strong></td>
<td>Common software license management for all FactoryTalk products</td>
</tr>
<tr>
<td><strong>DIRECTORY</strong></td>
<td>Common address lookup of resources that are shared among FactoryTalk enabled products</td>
</tr>
<tr>
<td><strong>SECURITY</strong></td>
<td>Common security authority for all FactoryTalk components in the system</td>
</tr>
<tr>
<td><strong>DIAGNOSTICS</strong></td>
<td>Common diagnostic messaging subsystem across all FactoryTalk products</td>
</tr>
<tr>
<td><strong>AUDIT</strong></td>
<td>Comprehensive record of any changes made to the manufacturing system</td>
</tr>
<tr>
<td><strong>LIVE DATA</strong></td>
<td>Enterprise-wide access to real time manufacturing data</td>
</tr>
<tr>
<td><strong>ALARMS &amp; EVENTS</strong></td>
<td>Enterprise-wide notification to real time alarms and events that require action</td>
</tr>
</tbody>
</table>
FactoryTalk View Studio

Common Design Environment
Global Objects
Industry Standard (ASM, ISA 101)
Symbol Library
Local Language Support
Extended Tag Properties
Integrated Approach to Control & HMI
Simplified Communications

PanelView 5000 ControlLogix®

Controller Reference Name: MyCLX
Logix Project File: C:\Lab Files\Logix\PV5K_Demo.ACD
HMI to Controller Path: 192.168.1.30 Slot: 0

ControlLogix®
PanelView 5000 terminals leverage information available in the controller to offer advanced diagnostics at runtime.
Logix-based Alarms

CENTRALIZED ALARM MANAGEMENT

Alarm state can be managed in one place

Reduction in network traffic through “publishing” technology

Improved time stamp accuracy

No alarm information loss in the event of HMI outage

No HMI tag duplication required, alarm instruction or tags directly

One, consistent shared alarm generation and response mechanism

On the fly changes to alarming tags are automatically updated in HMI
PanelView 5000 terminal applications automatically subscribe to Logix-based alarms with predefined alarm elements that require no configuration.
Extended Tag Properties

Logix Designer

• Tag Definitions (including extended properties)
• Alarm Settings
• Data Types

View Designer

New Tag Browser Interface

Save development time by eliminating HMI-based tags for related values
User-defined, HMI graphic objects can be built and mapped to logical objects
High-speed Button Control

Eliminate hardwired push buttons
Save the expense of the push buttons, wiring, I/O and labor
Simplified Design and Deployment
Reduced Design & Commissioning Time

- **Reduced** design and commissioning time
- **Improved** uptime and productivity
- **More detailed** and accurate alarm information
- **Improved** visualization and ease of use
Enhanced Graphics

- Comprehensive library of graphics in Studio 5000 View Designer software: shapes, common controls, equipment, ISO and ISA symbols
- Embedded animation and behavior: color and movement animation and control actions built into many objects
- SVGs allow reusable screen content - automatically scale screen content as appropriate for the target terminal
- Graphical objects are linked to controller objects
Reusable Add-on Graphics

- Changes made to an Add-On Graphics (AOGs) definition are propagated to all instances
- Create your own Toolbox graphic elements by combining existing elements
- AOGs can have custom properties linked to Logix data types
- AOGs reside in their own Add-On Graphics folder in the Toolbox
- Reuse AOGs within and across projects to save development time

Create AOGs under the Assets folder in Project Explorer

Bind the custom AOG property to a specific tag instance.

Drop an AOG instance on a screen by double-clicking or drag-drop out of the Toolbox just like any other element.

The tag browser automatically filters for the correct data type based on the property data type.
RA Library of Process Objects

**Step 1**
Import the PlantPAx® Library into Studio 5000® Project

**Step 2**
Drop and configure the device Add-On Instruction instance to your control program

**Step 3**
Create the base Add-on Graphic and assign it to the Add-On Instruction instance

**Step 4**
New Add-on Graphic can be accessed on device faceplates at runtime
Library of Faceplates
Save engineering time with objects-based configuration

Pre-defined objects for common functions

Reduce time to start application
Reduce number of clicks to manage
Easy navigation between faceplates
Multi-language Support

- Use to switch to any of the languages defined in the project
- The language switch will also switch the language strings from the controller including extended tag properties and alarm messages
Information-enabled HMI
FactoryTalk Alarms & Events

ControlLogix®

Define Once in Controller

FactoryTalk® View SE

View in HMI Automatically

FactoryTalk® FactoryTalk® VantagePoint®

Manage and Analyze in EMI

FactoryTalk Alarms & Events

Define Once in Controller

View in HMI Automatically

Manage and Analyze in EMI
FactoryTalk Historian

Plant-wide data infrastructure to **collect/store data** with scalability from **machine to enterprise**
FactoryTalk VantagePoint EMI

CONNECT

ORGANIZE

VISUALIZE
Regulatory Compliance

CAPTURE
Who, What, When, Where and Why

FactoryTalk View + FactoryTalk AssetCentre

21 CFR PART 11 COMPLIANCE
Mobility
Extend Your HMI

Interactive HMI Experience
- Graphics and Animations
- Read and Write Security Settings
- Real time and Historical Trending

Alarm Displays
- Maintenance-free client
- No client software to install or configure

Cross Platform Client Support
- Desktop: Windows
- Mobile: iOS, Android

VNC Capability
- Full control if needed
- No additional license required

Anytime, anywhere information availability on a device of your choice!
Introducing MobileView
Tethered Graphic Terminals

Take your application to the operator!
MobileView Tethered Operator Terminal

- MobileView brings portability to visualization with a tethered operator terminal
  - Runs FactoryTalk View Applications
  - Pre-installed and activated FactoryTalk View Machine Edition
  - Hardwired E-stop for operator safety
  - Three-position enabling switch provides increased safety in the event of operator fatigue
  - ThinManager® compatible
  - **New** Second-generation junction box capabilities
    - E-stop bridging capability
    - Terminal ActiveX ties junction box node identification to HMI tag
      - Enable specific screen content based on box node
    - IP65 enclosure

- IP65 enclosure
ThinManager Platform Management Tool

- Securely deliver content from any source to any combination of DEVICE, USER and LOCATION
  - Remote desktop servers
  - Thin clients
  - HMI
  - IP/USB cameras
  - Mobile devices
  - Users
- Management of thin clients throughout the factory
ThinManager Securely Delivers Content

THINMANAGER DELIVERS CONNECTED ENTERPRISE CONTENT IN 3 WAYS

By Device

By User

By Location

CONTENT TYPES
- HMI
- MES
- CMMS™
- ERP
- Web Content
- IP/USB Cameras
- Terminal Shadow
- PanelView Plus

DEVICES
- Thin/Zero Clients
- Mobile Devices
- PCs

USERS
- Individuals
- User Groups

LOCATIONS
- Facility
- Lines/Areas
- Assets/Devices
ThinManager provides secure configuration and delivery of content to any combination of device, user and location.

Deliver sessions to multiple monitors and/or virtual screens on a single thin client.

Deliver virtual desktops or manage PCs as thin clients.

Access feeds from USB & IP cameras.

PanelView Plus Remote Desktop to HMI (via VNC).

Deliver content to the right person at the right time and place.

Deliver applications based on what is assigned to the terminal or user.

ThinManager can easily assign content to users. This allows applications to follow a user as they move from terminal to terminal.

Users

Applications & Content

ThinManager

Application Delivery

VersaView® 5200 Industrial Thin Clients

HMI

CMMS

HTTP

ERP

MES

PLANT FLOOR

CONTROL ROOM

OFFICES
Lifecycle Management
**Product Lifecycle Category Definitions**

- **ACTIVE**
  - Most current product offering within a category.
  - Product does not have to be recently launched.

- **ACTIVE MATURE**
  - Product is fully supported and available, but a newer family exists.
  - Gain Value by migrating to the newer family.

- **END OF LIFE**
  - Discontinued date announced – actively execute migrations and last time buys.
  - Product available until the Discontinued date.¹

- **DISCONTINUED**
  - New product no longer available.
  - Repair/exchange services may still be available.

¹Discontinued date may be extended, based on available inventory; Outages on specific inventory may occur prior to Discontinued date.

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Product Launch

A Newer Product in that Category is Launched

Announcement that Product will be Discontinued

Discontinued Date
Product Lifecycle Status Search

We know it’s critical for you to maximize your investment in your automation system, and we support that with a track record of long product lifecycles relative to our competition. But as products age and give way to new technologies, we also help you meet the demand to innovate.

This includes clearly identifying a product's current lifecycle stage, making it easier for you to proactively plan and manage the transition from existing equipment to leading-edge products and technologies. Use this search tool to identify the most contemporary Rockwell Automation products, bringing you advancements in performance, flexibility, and security with the potential to provide you with a competitive edge.

Product Search

For the most up-to-date lifecycle status on products you are interested in:

1. Enter the catalog number in the Product ID field below.
2. Submit your query by selecting “Search.”
   - You can enter a partial catalog number to get lifecycle data on a family of products (e.g., enter “1771” to retrieve status information on all 1771 I/O products).
   - You must enter at least 3 digits of the catalog number and an optional wildcard string to retrieve data.

* Catalog Number: 9381-25E2506

SEARCH CLEAR

* Data is refreshed on a monthly basis to provide you with the most current lifecycle status information.

www.rockwellautomation.com/legacy
Migrating to Modernize – Additional Resources
Additional Resources – PanelView

- Selection Guide – PanelView Terminals and Industrial Computers
- Which PanelView is right for your application? - PanelView Portfolio Comparison Chart
- PanelView Plus 6 to PanelView Plus 7 Migration Guide
- Legacy PanelView to PanelView Plus 7 Catalog Conversion Guide
- YouTube Playlists – “How to” videos, Tips & Tricks, Feature Introductions
  - PanelView 5000 & Studio 5000 View Designer
  - PanelView Plus and FactoryTalk View Machine Edition
Additional Resources – FactoryTalk View SE

- FactoryTalk View SE “content pack”
  [link]
- RSView®32 to FactoryTalk View SE migration site:
  [link]
  - Collection of tools to help with the process of migrating
  - Videos and other materials covering why you should consider migrating, technical tips and demo of migrating an app, and success stories
- YouTube Playlist – “How to” videos, Tips & Tricks, Feature Introductions
  - FactoryTalk View Site Edition

Ask about the StepForward™ program for commercial incentives to migrate
Thank You!