Premier Integration

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Simplify system design and programming, cut development time and boost productivity using advanced integration capabilities.

The complexity of today's manufacturing operations requires more extensive work to configure and connect controllers, motor control and other devices on a network. An effective level of integration can require multiple software tools and extensive programming, making the design process cumbersome, time-consuming and costly.

Enabled by the Logix control platform, the exclusive Premier Integration experience consolidates controller programming, device configuration, and machine operation and maintenance into a single, user-friendly software environment. This experience helps engineers reduce integration and configuration times. It also gives operators access to critical machine data, including diagnostic information for improved maintenance, machine uptime and productivity that can be seen across the enterprise.

LISTEN.
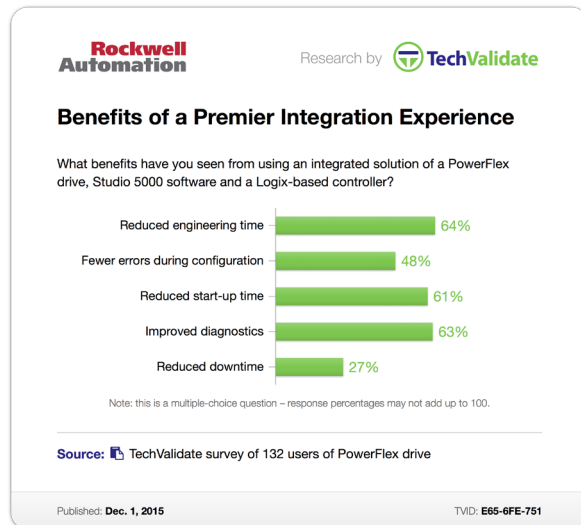THINK.
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Increased Integration Complexity

Reducing design, commissioning and maintenance times has long been a target in industrial automation projects. As industrial automation devices are more dependent on digital communication, the success of a project will greatly depend on how easily devices are configured to exchange data across digital networks. At the same time, improved data integration between controllers, drives and other devices will result in systems that can be more productive, and deliver more information and diagnostics.

Organizations using devices from multiple vendors often experience difficulties in getting the devices to efficiently communicate and operate in concert with each other. This can result in extended engineering time and increased costs. Additionally, an array of devices in the control system can create maintenance challenges in the future.

A simpler, more holistic integration approach is needed to help industrial engineers incorporate these higher levels of complexity and connectivity while being mindful of development time and costs. In addition to streamlined development, the more advanced integration also benefits operations and maintenance with more predictive diagnostics, faster system upgrades or replacements, and faster troubleshooting during downtime events.

Rockwell Automation

Research by **TechValidate**

Benefits of a Premier Integration Experience

What benefits have you seen from using an integrated solution of a PowerFlex drive, Studio 5000 software and a Logix-based controller?

Reduced engineering time	64%
Fewer errors during configuration	48%
Reduced start-up time	61%
Improved diagnostics	63%
Reduced downtime	27%

Note: this is a multiple-choice question – response percentages may not add up to 100.

Source: TechValidate survey of 132 users of PowerFlex drive

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Introducing Premier Integration

The Premier Integration experience from Rockwell Automation represents the next level of controller and device integration. It combines the functionality of an automated control system with the resources in the field device and communication infrastructure. Premier Integration simplifies and streamlines system design, maintenance and operation for any networked automation systems.

The foundation of Premier Integration is a Logix-based control architecture and intelligent Allen-Bradley® devices. It is unique to specific control-system elements from Rockwell Automation, including:

• Controllers

• Drives

• Switches

• Motor control centers

• Overload relays

• Soft starters

Another defining characteristic of Premier Integration is its use of a single development environment. The Rockwell Software® Studio 5000® design environment is the only framework engineers need when designing, integrating and configuring different devices.

Premier Integration offers a business-enhancing alternative to the traditional integration approach. It can help ease integration, cut development time by as much as 70 percent, and improve information visibility and productivity in manufacturing operations.

Improve Ease of Usability

The Studio 5000 software is specifically designed to deliver an intuitive and user-friendly experience for designing and configuring systems. This mitigates the need for individual software tools specialized for each device and can help reduce training burdens – critical factors for manufacturers to consider as skilled workers retire, and workforce-availability and competency challenges escalate.

Allen-Bradley devices' data profiles are defined and pre-loaded in the Studio 5000 software. Once a field device is selected to operate as an input/output (I/O) device of the controller, a data object representing the device is automatically created in the controller memory. This represents a significant evolution from using generic data tables and manuals to map information from field devices into the controller.

Within the software, engineers can access device-specific startup and configuration wizards to help guide them through the configuration process. The wizards will identify items that need to be configured and walk users through each of them. They also help users narrow down the parameters required for their applications, which helps eliminate the time-consuming process of searching through specific parameter numbers and definitions.

The use of integrated device profiles allows engineers to save intelligent device configurations directly to the controller in a project file. This file can serve as the single source for intelligent, device-configuration data to help ease design and commissioning, and help reduce future downtime by speeding up the device-replacement process.

Reduce Development Time and Costs

Beyond reducing integration complexity, Premier Integration can help industrial manufacturers reduce their engineering time and associated costs in numerous ways, including the following:
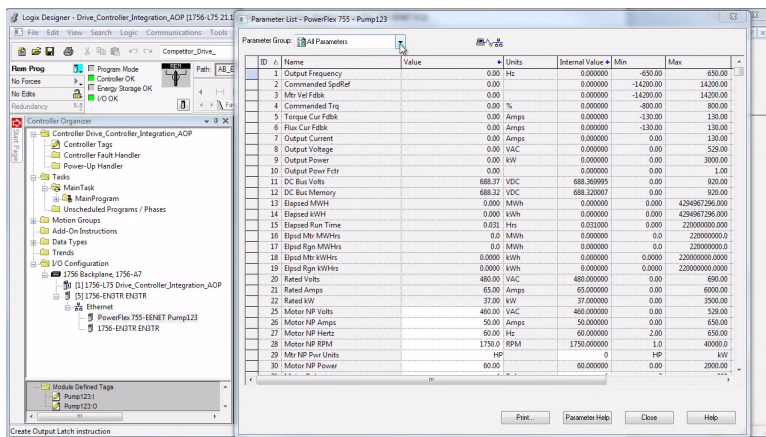
Logix-based controllers recognize PowerFlex drives and automatically import their device profiles to provide descriptive information of parameters, eliminating the need for users to reference a user's manual to match the parameter number with the parameter name.

Device Mapping and Configuration

Using a single software environment can help reduce the potential for costly development errors that might otherwise occur when redundant programming is carried out in more than one software tool. Similarly, the ability to configure the controller and drive network connections from a single location can help eliminate I/O mismatch errors.

When mapping devices, the Logix-based controller can recognize specific Allen-Bradley components and automatically import their device profiles. For example, when integrating an Allen-Bradley PowerFlex® 755 AC drive, the engineer can simply select the specific module and the Studio 5000 software will then automatically pull in all drive parameters. The engineer no longer has to manually associate parameter numbers with descriptions or enter the drive's details, such as power and voltage.

Without the benefit of Premier Integration, engineers would need to spend more time referencing device manuals to identify the meaning of the different parameter fields in the control-system software. They would then need to spend additional time configuring the drive with another software tool, making sure they selected the same parameters in the control system as the device.

Premier Integration also automatically populates descriptive tag names and the respective tag types. This eliminates the laborious and inefficient process of manually entering this information for each individual tag – saving hours or even days of configuration time depending on a system's complexity.

Duplicating Devices

Once a device is configured, the copy-and-paste capabilities within the Studio 5000 software can help reduce the time needed to integrate additional, similar devices. For example, if duplicate devices are needed for the same project, the engineer could simply copy the original to create additional device nodes. The Studio 5000 software automatically transfers the descriptive tag names and configuration settings used in the original drive to the new drives through the copy-and-paste process.

Tag-Aliasing

Early development significantly speeds the time for product designs to get to market. Within a Logix-based architecture, an engineer can write an entire program with meaningful tag names before the physical hardware is ready, and then assign the physical module and terminal information at a later time. This capability, known as tag-aliasing, is commonly used to develop programs before wiring diagrams are available. Without tag-aliasing, concurrent development is not possible and programmers must wait for the design-engineering group to complete its electrical layout.
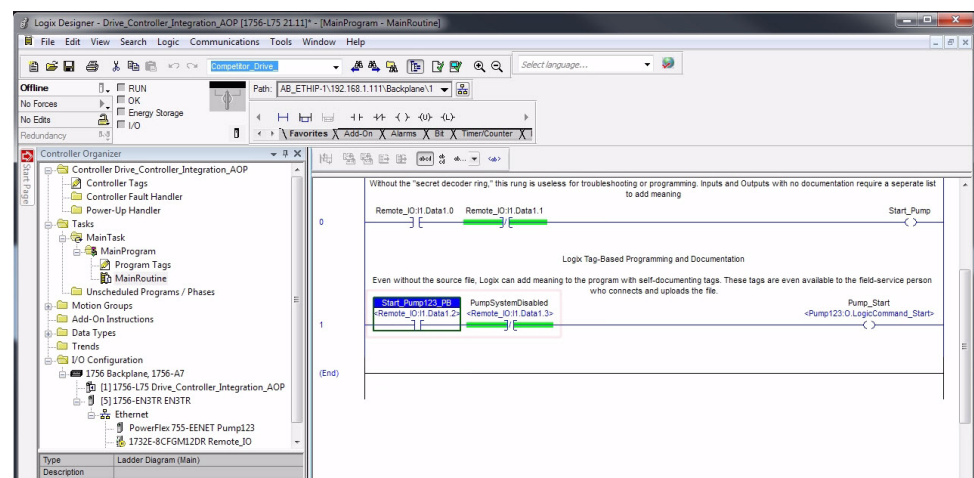
Users can speed system configuration by programming applications before hardware has arrived with tag-aliasing in Studio 5000 software.

Library Management

Library management is a key element of Premier Integration. It enables engineers to efficiently store, manage and re-use code from their programs. This saves development time while also building on the outcomes of successful projects.

Project code can be exported to the code library for use again in future projects or even to establish a new company standard for similar applications. To re-use the content, engineers can simply drag and drop the code from the library into the new project. Within a Premier Integration experience, the software carries over all of the logic and tags with the code in the import process.

Programmers can visit **http://samplecode.rockwellautomation.com** to begin building their code library or share applications with other users.

Exclusive Application Resources

Based on the Common Industrial Protocol (CIP™) – an application-layer protocol that delivers plantwide communication for control, device configuration and data collection – EtherNet/IP™ enables real-time, deterministic control for both drives and servo drives.

Highly accurate coordination of multiple motors can be achieved through the combination of synchronization capabilities in the communication protocol and powerful instructions in Logix-based controllers. These resources are available for AC and servo drives that present the specific, device-independent profile supporting synchronization over the network.

Engineers can use the same instructions for programming and re-use existing machine profiles for new devices without needing to re-configure or program from scratch.

In addition, engineers can more easily make device changes, via late-point configuration and device independence. If a servo drive is needed instead of a compact AC drive, the controller code does not need to be changed.

Rockwell Automation   Research by **TechValidate**

40% of surveyed industrial manufacturers have reduced downtime with automatic device configuration.

Source: TechValidate survey of 140 users of PowerFlex drive

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Enhance Productivity

The benefits of Premier Integration extend beyond development to production operations. Collecting raw data and delivering it to plant personnel in the form of actionable information is often not possible – or difficult and time-consuming to design – in traditional systems. With Premier Integration, information-capturing and delivery capabilities become inherent to the system. As a result, operators or technicians can easily access device diagnostics, faults, alarms and other critical event information. This information can be used to make better decisions from the machine up to the enterprise level.

Premier Integration also makes systems easier to maintain. For example, when a drive needs to be replaced, maintenance technicians can leverage automatic, device-configuration capabilities within Logix to automatically detect the new drive. Allen-Bradley Stratix™ managed switches can automatically re-assign the IP address for the new device. The controller can then download all configuration parameters to get the system back online faster. This reduces the need for maintenance personnel to track down the original programming files and re-configure a replaced device manually.

Summary

As automated production systems continue to grow in complexity, productivity is becoming increasingly important in all aspects of manufacturing operations – including the machine design and configuration stages. The traditional, labor-intensive approach of manually integrating and configuring devices is time-consuming, costly and counterintuitive to the needs of today's manufacturers.

Premier Integration gives engineers an easier integration and configuration experience, and assures operators and technicians they will have the information needed to keep machines running more productively and profitably.

For more information on Premier Integration, contact a Rockwell Automation sales representative or visit **http://www.rockwellautomation.com/global/products-technologies/intelligent-motor-control/overview.page**.

Resources

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