

Honeywell | Connected Industrial

CHALLENGES OF MULTIVENDOR SYSTEMS IN IMPLEMENTATION OF IIoT-READY PLCs

The Benefits of Combining PLC and DCS Platforms from a Single Vendor



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Introduction

The Industrial Internet of Things (IIoT) has the potential to be the most significant development in automation systems since the introduction of distributed control systems. It offers a wide range of potential uses and benefits.

- **Faster Configuration and Commissioning**
- **Leveraging Data from Dispersed Enterprises**
- **Proactive Remote Asset Health Monitoring**
- **Improved Collaboration**

Specifically, PLCs with IIoT capability can provide a broad range of benefits:

- Enabling businesses to leverage vast amounts of data
- Providing operations personnel with improved remote monitoring, diagnostic and asset management capabilities
- Enhancing data collection even in the most dispersed enterprises
- Improving decisions about the actual health of assets
- Reducing the time and effort for configuration and commissioning

- Minimizing the need to troubleshoot device issues in the field
- Bringing new production fields online faster, and
- Improving collaboration across the company.

Some of the concerns around utilizing IIoT include safety and security, connectivity, and compatibility with existing network technologies and devices. We feel that the challenges to adoption are readily surmountable with the right technological partners.

NEXT GENERATION OF CONTROLLERS UTILIZING IIoT

- **Optimize Operations and Maintenance**
- **Open System Benefits**
- **OPC UA Open Communication**
- **Multi-Level and Multi-Platform**
- **IIoT-Ready for Cloud Applications**
- **Investment Protection**
- **Easier Maintenance**



An IIoT-ready PLC should optimize operations and maintenance efficiencies to liberate personnel from manual processes. It should also provide all the benefits that open systems has historically promised: secure connectivity, tight integration to devices from multiple vendors, easy configuration, efficient operations, and reduced maintenance.

Utilizing OPC UA as THE common standard provides smooth and secure integration to a broad range of instruments, equipment and software. Many sites have legacy equipment that needs to be integrated together to make use of the data and still preserve the investment that has already been made at the site.

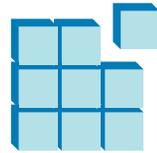
Interoperable multi-level and multiplatform open communication provides flexible and scalable design—enabling standardization with less hardware.

An IIoT-ready platform enables more direct access to cloud-based applications for visualization and analytics. With direct access and reduced gateways, IIoT-ready PLCs provide investment protection and easier maintenance resulting in reduced cost and risk.



A SINGLE VENDOR REDUCES IMPLEMENTATION RISK AND COST

- **Reduce Communication Problems and Errors**
- **Increase Coordination and Speed of Implementation**
- **Reduce Hardware and Training**
- **One Vendor Can Provide Both DCS and PLC Expertise**



However, coordination among several vendors can present risk to implementation of an automation project. Communication problems and resulting errors and gaps can be alleviated by using a single vendor for design and installation of PLCs as well as the overall control system. Coordination is easier with fewer teams and direct access to system knowledge, resulting in faster system setup, testing and troubleshooting. There is reduced risk with fewer elements to manage and a single point of responsibility. Reliable integration reduces both risk and cost with fewer coordination errors, less engineering, faster installation, less training and reduced hardware. Utilizing a single vendor can provide a single point of responsibility for both PLC and DCS implementation.



INCREASING OPERATOR EFFECTIVENESS REDUCES COST

- **Leaner Control Room**
- **Common HMI For DCS and PLC**
- **Fewer Stations, Less Hardware, Less Licensing and Training**
- **Smaller Footprint, Easier Maintenance**
- **Distribute Information to the Right People**
- **Enable a Dispersed Workforce**
- **Remote Access to Real-Time, Contextual Data**



In addition, with a leaner control room, operator effectiveness can be increased and risk reduced. Common HMI for PLC and DCS means fewer operator and engineering stations, less hardware and wiring, reduced IT licensing, and less training with a common operator interface. Your operators, technicians, engineers are going to make fewer mistakes because they are only using one system consistently. The end user benefits from reduced cost over the lifecycle with smaller footprint and easier maintenance.

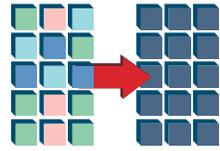
COLLABORATION AND THE DISPERSED ENTERPRISE

Data needs to not only be interpreted and organized; it must reach the right people, and bring people together where a range of input is needed. IIoT technologies and integration between the PLC and DCS are key to this collaboration. The availability of data results in operations able to run with a dispersed workforce and Internet-connected mobile devices can run increasingly sophisticated HMIs to enable users to manage and make sense of that data flow. Remote access to real-time and contextualized information for workers brings opportunities to radically decentralize decision-making.



PROJECT ENGINEERING AND CONFIGURATION

- **Remote Configuration and Device Monitoring**
- **Integrated HMI with a Common View**
- **Universal I/O Enables:**
 - **Late Configuration & Flexible Design**
 - **Standardized Cabinets**
 - **Reduced Spares**
 - **Eliminated Marshalling**
 - **Reduced Footprint**



An integrated system utilizing PLCs integrated with DCS can offer remote configuration and device monitoring, all on an integrated HMI providing a single view across operations.

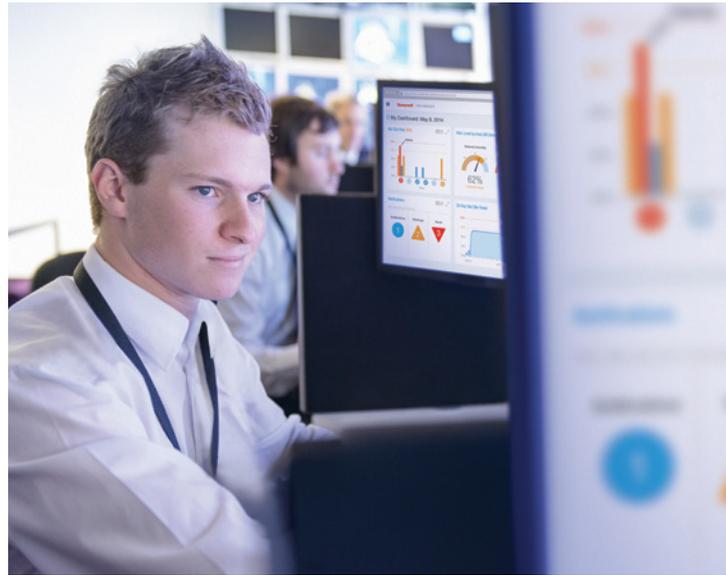
In addition, Universal Channel Technology enables the entire cabinet to become a standard part, with I/O channels quickly configurable to allow modules to serve as analog or digital and as input or output. Engineers can quickly accommodate late configuration changes remotely with a simple software configuration change.

Universal I/O provides both configuration efficiency and flexible design, reducing project schedule, cost and risk. It also eliminates tedious documentation updates for cabinet configurations and simplifies maintenance. The reduction in types of I/O modules reduces the number of spares needed and associated holding costs. With reduced or eliminated marshalling, there are fewer cabinets, reduced footprint, and lower infrastructure cost.



CYBER SECURITY EMBEDDED IN PLC AND DCS

- **Secure Boot**
- **Built-In Firewall**
- **Certified Secure Development Lifecycle**
- **Early Startup**
- **Remote Diagnostics**
- **Comprehensive Health Monitoring**



Embedded cyber security supports compliance, reduced risk, and availability. Features can include secure boot to prevent uploading of unauthorized software, a built-in firewall to reduce exposure to denial-of-service attacks and message flooding. A certified secure development lifecycle including threat modeling and communications robustness testing ensures security is built in from the start.

COMBINED PLC/DCS SOLUTION REDUCES COST AND UNPLANNED DOWNTIME

Ultimately, a combined PLC/DCS solution reduces cost and unplanned downtime. Reducing time for commissioning and minimizing troubleshooting allows early startup and longterm cost savings.

In addition, there is reduced unplanned downtime associated with the ability to remotely diagnose equipment and implement comprehensive health monitoring.

Honeywell is currently developing solutions to better integrate devices and systems that take advantage of the IIoT, Big Data, and the Cloud in a secure environment. And as the technology develops, the challenges to adoption are being overcome, solutions will become standardized, and the potential benefits will grow. Combining PLC and DCS technology, a vendor with leading technology and integrated system expertise can help lead you through these changes in technology and the IIoT revolution.

For More Information

To learn more about Honeywell's ControlEdge PLC, visit www.HoneywellProcess.com/PLC or contact your Honeywell account manager.

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