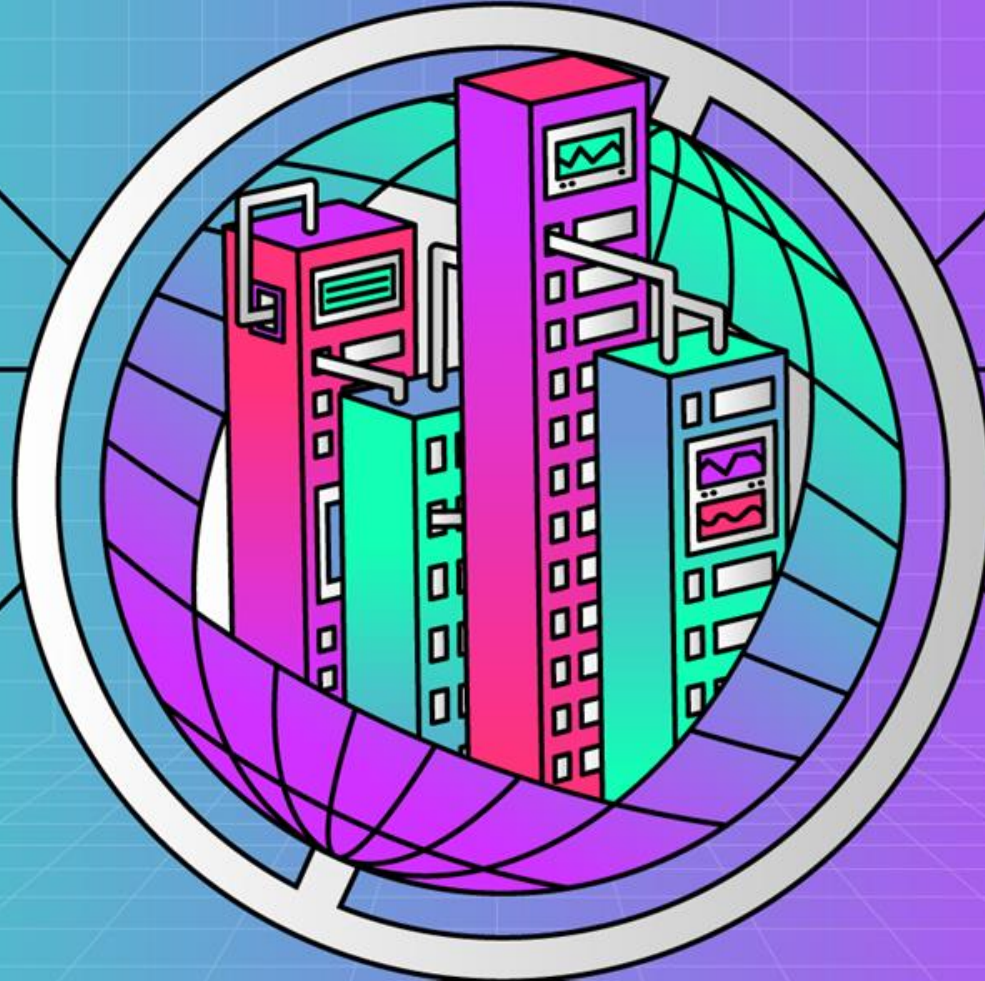


Expanding Connectivity with Ignition's Mitsubishi Driver



Presenters



Kevin McClusky
Chief Technology Architect
Inductive Automation



Kent Melville
Director of Sales Engineering
Inductive Automation

Guest Presenters



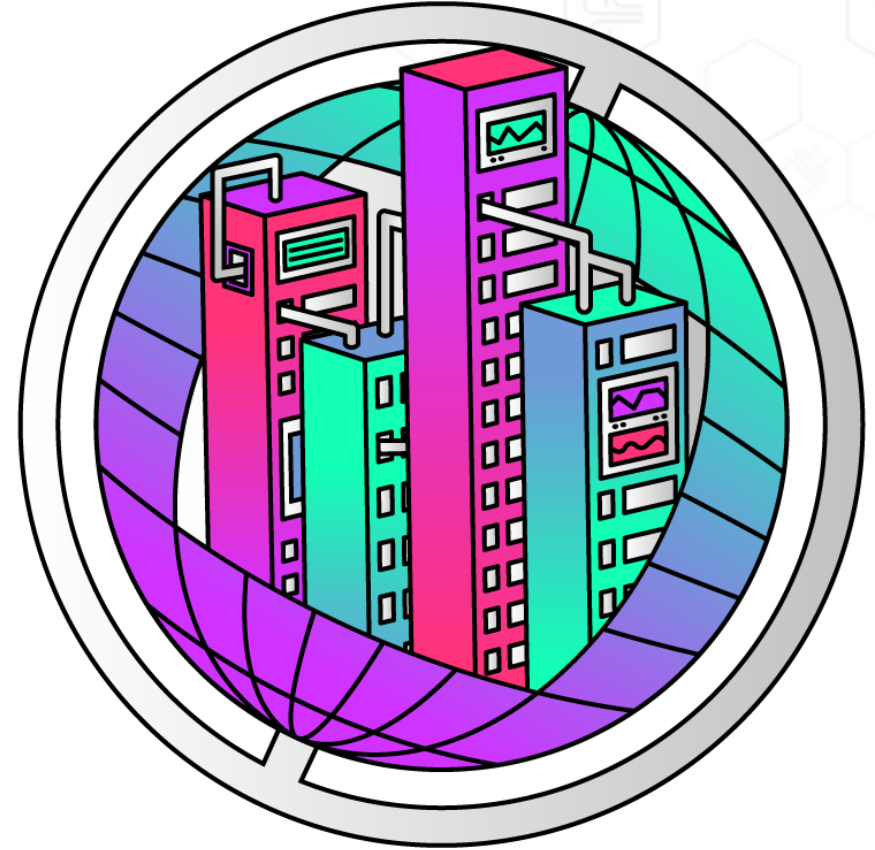
Glen Fry
Managing Director
iControls



William Bowen
Control Systems Engineer
ESM Automation

Agenda

- **Ignition Basics**
- **Expanding Connectivity**
- **Ignition's Mitsubishi Driver**
- **Use Cases**
- **Live Demo**
- **Audience Q&A**



Ignition!

by inductive automation

**The Unlimited Platform for
SCADA and So Much More**

- **Connect, Design, Deploy Without Limits:**
 - One central hub for everything on the plant floor
 - Create any kind of industrial application
 - Web-deploy clients to desktops, industrial displays & mobile devices
- **Unlimited licensing**
- **Industrial-strength security and stability**
- **Trusted by thousands of companies worldwide**

Touch Panels

Connect to any touch panel screen



Databases

Connect to any number of databases



PCs

Use any PC regardless of operating system



Mobile Devices

Access data via wireless smartphones and tablets



PLCs

Connect to any PLC through OPC



LIMs

Connect to virtually any device, such as barcode scanners, scales, sensors, etc.



MES & ERP Systems

Communicate with other enterprise systems



Web Services

Connect to any web service including REST and SOAP



MQTT

Connect intelligent devices to infrastructure



OPC-UA, OPC-DA, OPC Tunneler

Communicate with virtually any OPC server



OPC-HDA

Access historical data from databases, devices, and applications

Ignition!



Success Stories

Success Story: Unlimited Licensing

Chobani®



“Unlimited licensing has helped Chobani keep up with rising demand for its product. Because of the unlimited licensing with Ignition, we can roll out as many clients, as many places as we want, whenever we see the need. With Ignition, we’ve been able to roll out several different projects more aggressively to get data to the operators on the plant floor more quickly.” – Furby & Givens

<https://inductiveautomation.com/resources/casestudy/worlds-largest-yogurt-plant-thrives-on-ignition>

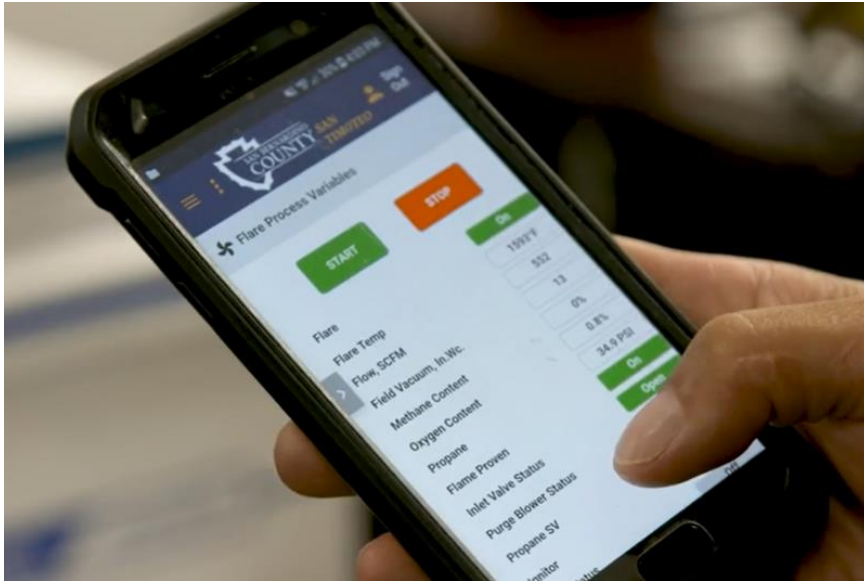
Success Story: Ease of Deployment



"We really wanted the ability to see and monitor all aspects of production. To be able to monitor utilities, packaging, brewhouse, and even quality-lab data - all in one place - has been super-convenient. Ignition has really allowed us to streamline our processes, to where we're capable of increasing our capacity. We can brew more in a smaller timeframe than we were able to before." – Blevins & Moore

<https://inductiveautomation.com/resources/casestudy/madtree-brewing>

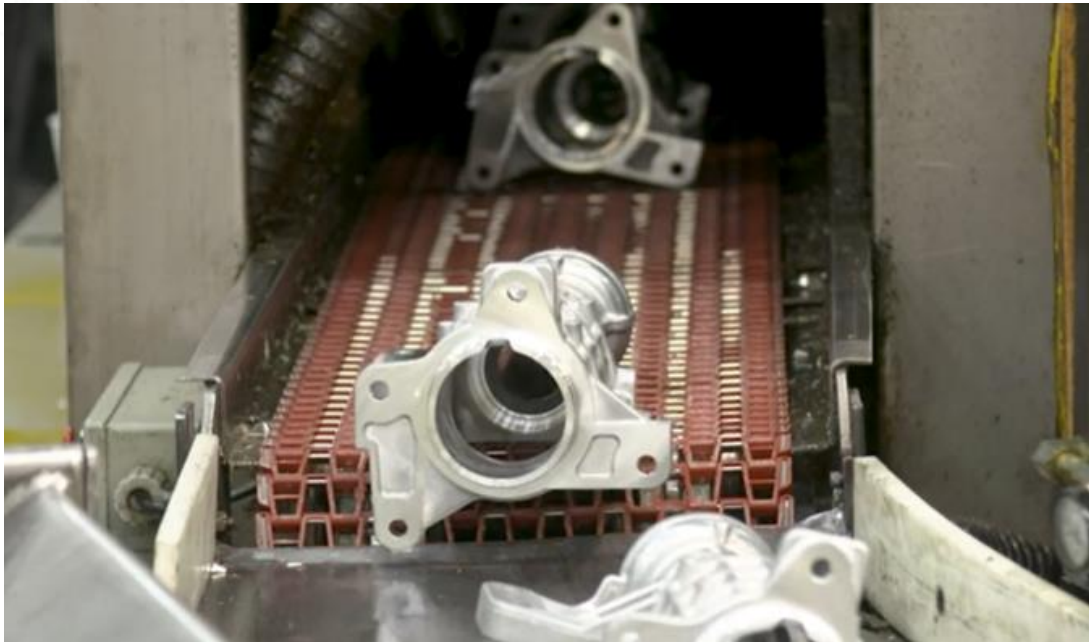
Success Story: Digitization



"Landfill executives and operators can now view the site remotely from any device, anywhere. Prior to implementing Perspective on the system, internal and regulatory reports were filled out by hand. Now the reports are automatically generated, pulling data from the system, reducing O&M costs and diminishing human error." – San Bernardino County

<https://inductiveautomation.com/resources/customerproject/new-mobile-capabilities-bring-more-data-to-decisionmakers>

Success Story: Increased Visibility



“Before, if I was at a different facility and there were troubleshooting issues, I would have to travel there to help out. Now that we have Ignition, I can access the SCADA from anywhere and see in real time actual images of the different machines and what they’re doing, which is very helpful for troubleshooting. Having real-time data we can access from anywhere allows us to see and address the issue a lot more quickly than we could in the past - which saves us time and money.” – Jacob

<https://inductiveautomation.com/resources/casestudy/mkc>

Success Story: Combining Data Sources



“All systems (video, public address system, intercom, network management system) and IP equipment are interconnected in real time to the control room. Operator experience with a unified HMI to monitor and to control all equipment. HMI is easy to use for operation and maintenance, troubleshooting and advanced system and equipment diagnostics. The BYES-SMP provides for the Paris T9 Tramway will also be used for other kinds of Tramway Lines.” – Paris T9 Tramway

<https://inductiveautomation.com/resources/customerproject/smart-technology-for-paris-tramway>

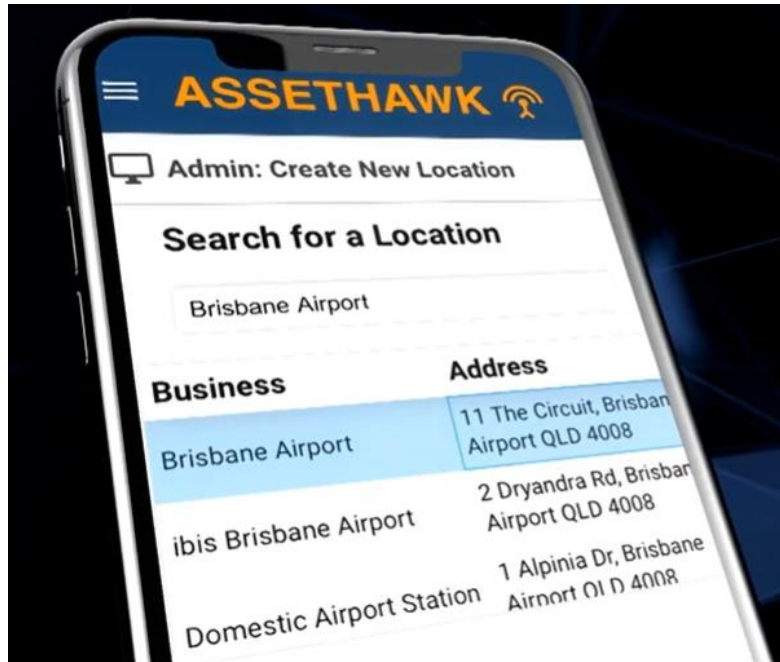
Success Story: Bandwidth Savings & Cloud



“With Ignition Edge, the software allows for store-and-forward capabilities upon a loss of communication. The Cirrus Link MQTT allows for reduced data rates and flexible automation for the addition of new devices in the field. Another benefit was the compressed data, allowing for more efficient cellular communications.” – ARB

<https://inductiveautomation.com/resources/customerproject/cloud-edge-more-enable-a-fast-solution-for-numerous-sites>

Success Story: Leveraging the Cloud



“Deploying Ignition on AWS eliminated the usual IT headaches of managing and scaling server hardware infrastructure - and met the OT department’s request to keep IT out of it. Use of MQTT radically decreases bandwidth usage and offers massive scalability. Operations, dispatchers, and maintenance teams have absolute real-time visibility of fixed and mobile assets. ESM estimates that the client’s number of miles driven to service sites decreased by 40 percent - directly translating to savings in fuel, labor, and vehicle costs.” – ESM

<https://inductiveautomation.com/resources/customerproject/strong-scalability-with-the-cloud-mqtt-mobility-more>

Success Story: Future-Proof with Ignition



"Ignition provides an open platform and flexible software we can make changes to easily, without the need to go back and carry out a full rebuild of the SCADA system. In addition to the baggage-handling system, Dublin Airport is using Ignition for human intrusion detection, condition monitoring, and the baggage sorter HMI in Terminal 1. Future plans for Ignition include monitoring of critical equipment in the airport." – Quinn

<https://inductiveautomation.com/resources/casestudy/baggage-handling-system-upgrade-inspires-future-projects>

Expanding Connectivity

Ignition Drivers

- OPC UA server comes with a number of drivers for common protocols out of the box
 - Easily expandable
 - New drivers can be downloaded and installed
- Drivers for the OPC UA Module are deployed as modules themselves.

Expanding Connectivity

Existing Drivers

- Omron
- Siemens
- Modbus
- BACnet
- Allen-Bradley
- UDP and TCP
- DNP3
- IEC 61850

OPC UA Client

- New PLCs with OPC UA Servers built in
- 3rd party OPC Servers

MQTT Sparkplug Client

- New PLCs with MQTT Sparkplug support built in
- 3rd party MQTT Servers



Expanding Connectivity

New Forms of Connectivity

- Interoperability
- Cloud connector modules



Expanding Connectivity

Effective Globally

- Worldwide Focus
- Worldwide Commitment
- International Distributor Program
- Different Solutions for Different Regions

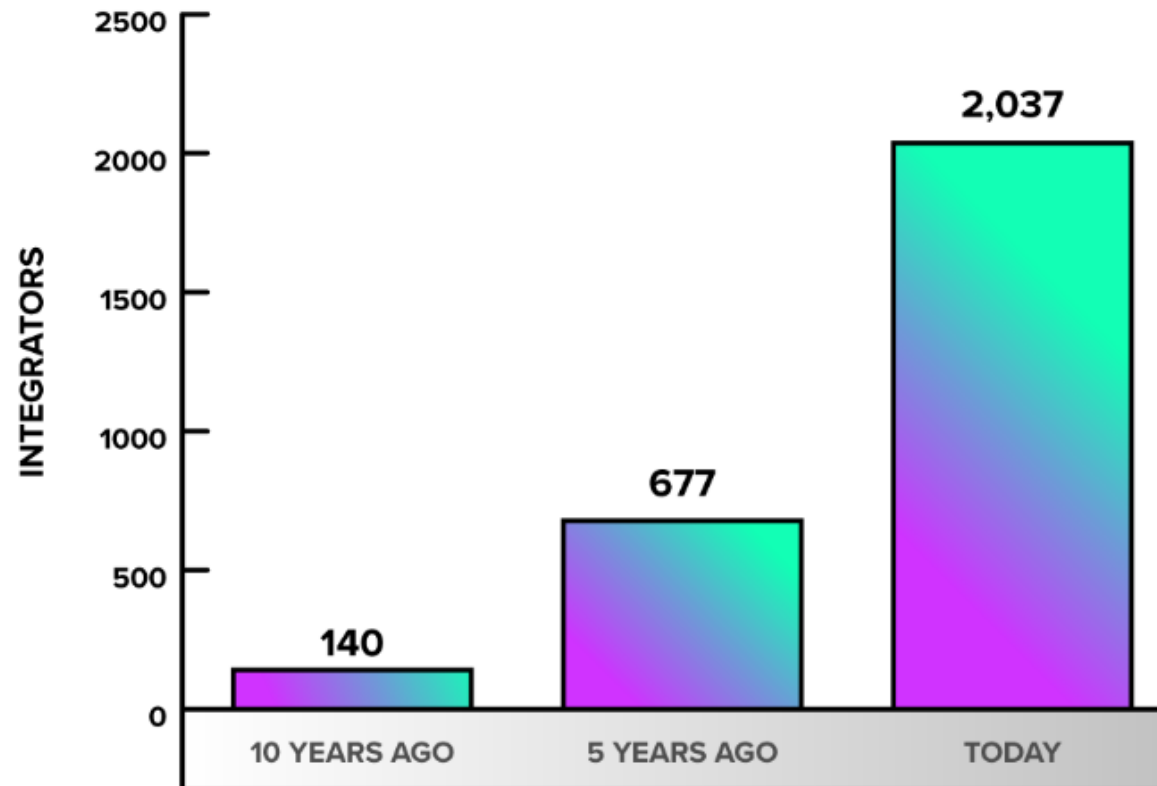
Expanding Connectivity

Effective Globally

- Inductive Automation celebrated its 20 year anniversary in 2023
- Inductive Automation's global footprint has expanded rapidly over the past decade

Integrators Outside the US

Enrolled in the Integrator Program



Mitsubishi Driver

Mitsubishi Driver

- Over 40 years of PLCs
- Over 10's of millions installed
- Compact “brick type” and modular
- Dominant across Asian regions
- Known for robust quality and excellent performance

MELSEC iQ-F
series



Mitsubishi Driver

Mitsubishi Driver

- Supported MELSEC Series PLCs
 - iQ-R - Series
 - iQ-F - Series (FX5)
 - Q - Series
 - L - Series
 - F - Series (FX - Series)
- SLMP communications via the PLC Ethernet port



Mitsubishi Driver

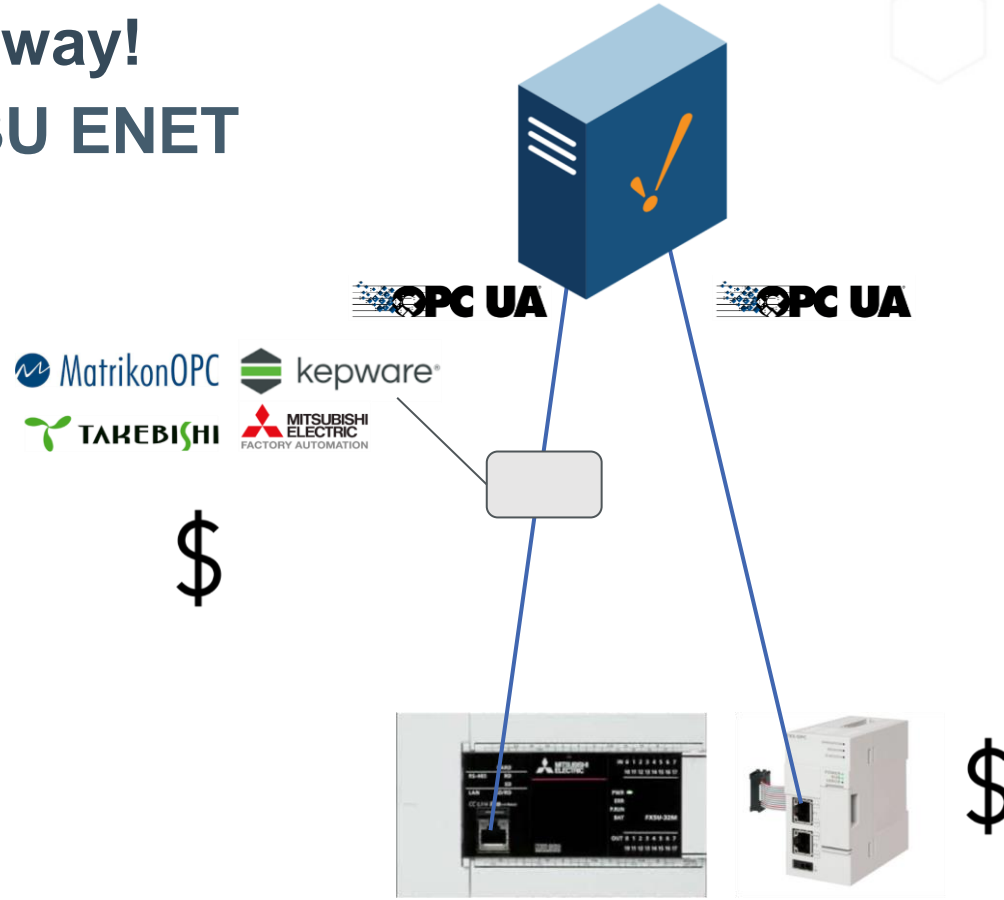
Mitsubishi Driver

- Addressing on the Gateway
 - Similar to Modbus driver
 - Import/export CSV
- Addressing in the Designer
- Optional Addressing
 - Data Types
 - Arrays
 - Bit Indexing
- Key Areas (Device Items)
 - X
 - Y
 - M
 - D
- Data Types
 - Bool
 - Int16
 - Int32
 - Int64
 - UInt16
 - UInt32
 - UInt64
 - Float
 - Double
 - String
 - Wstring

Connecting

Connecting the old way!

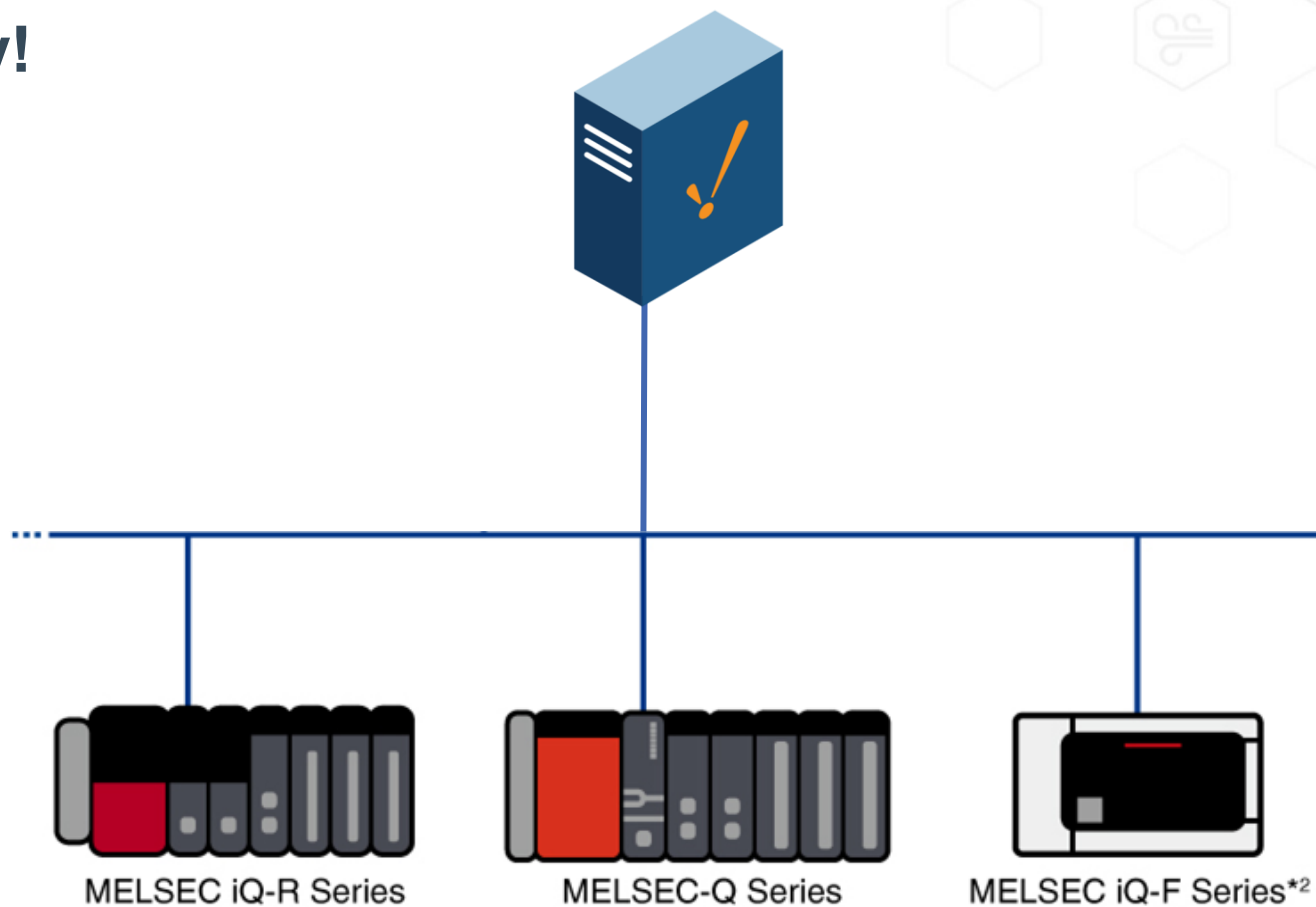
- **FX - Series - FX3U ENET**
- Q - Series
- L - Series
- iQ-F (FX5)
- iQ-R



Connecting

Connect elegantly!

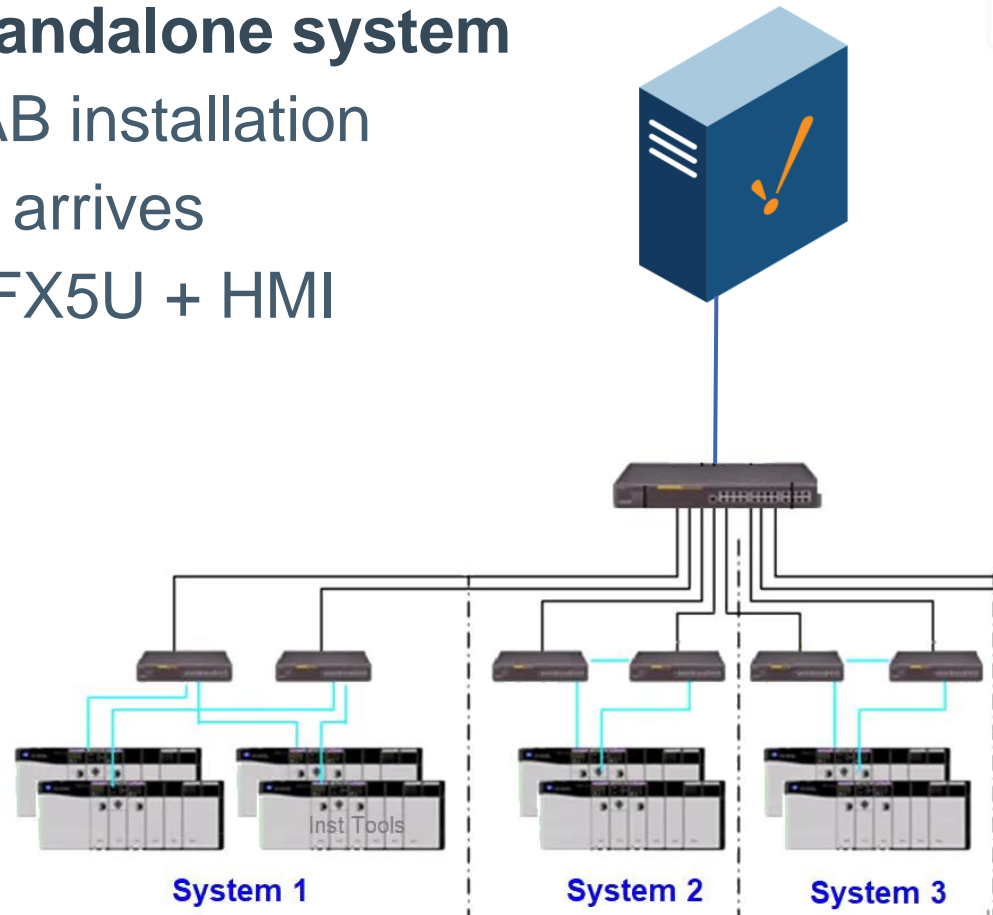
- Simplicity
- Compatibility
- Security
- Free!



Use Case 1

Integration of standalone system

- Existing site AB installation
- New machine arrives
 - MELSEC FX5U + HMI



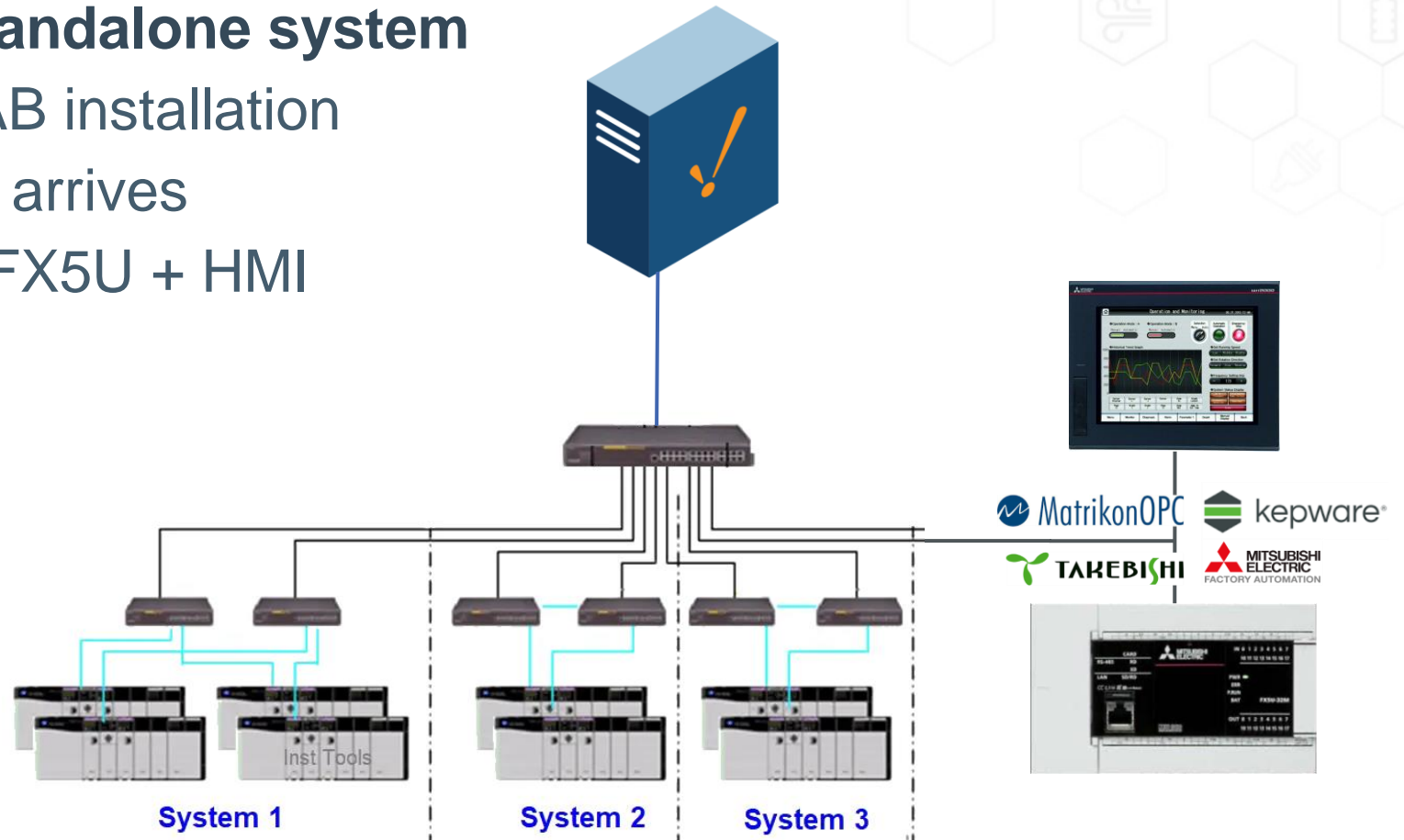
NEW!



Use Case 1

Integration of standalone system

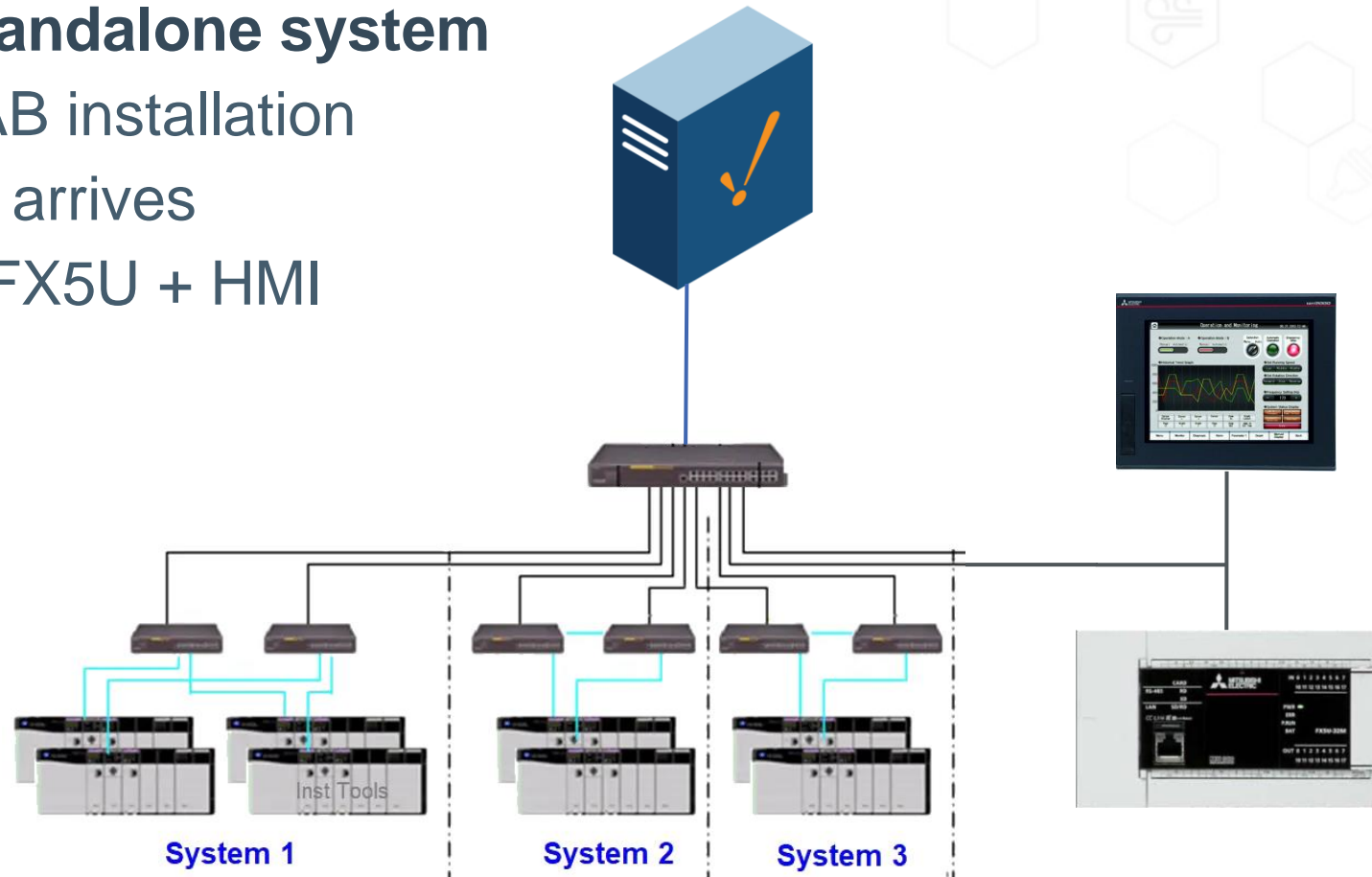
- Existing site AB installation
- New machine arrives
 - MELSEC FX5U + HMI



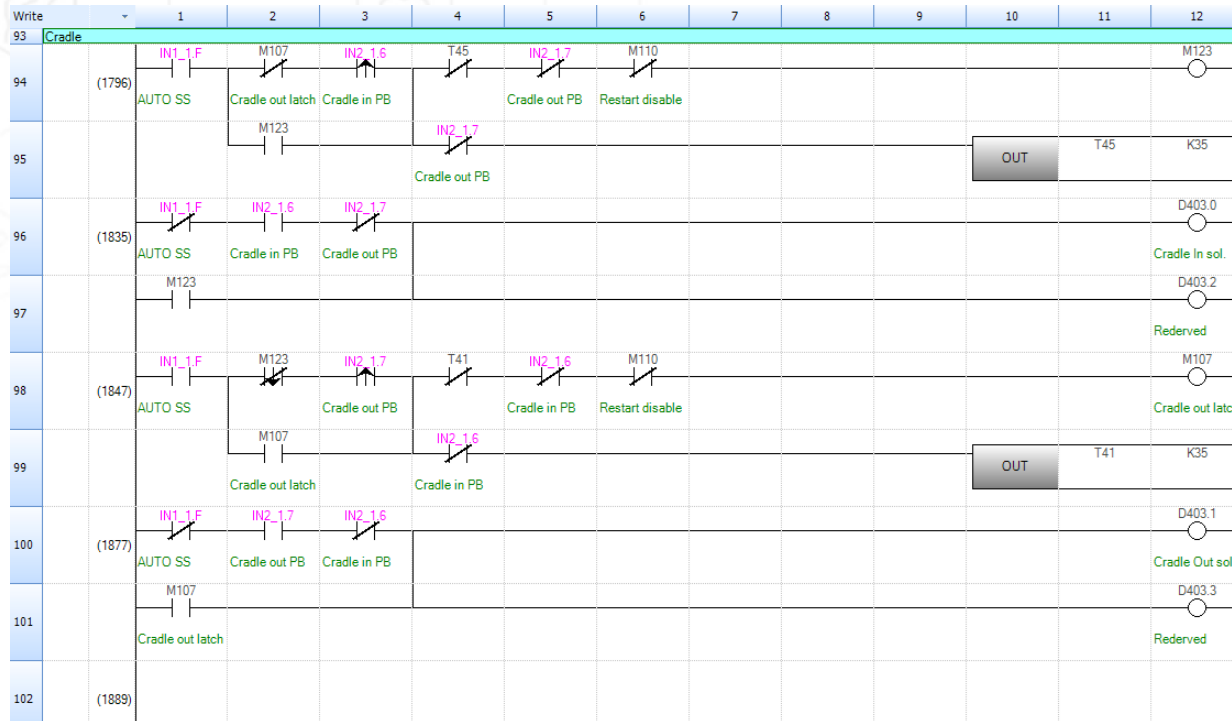
Use Case 1

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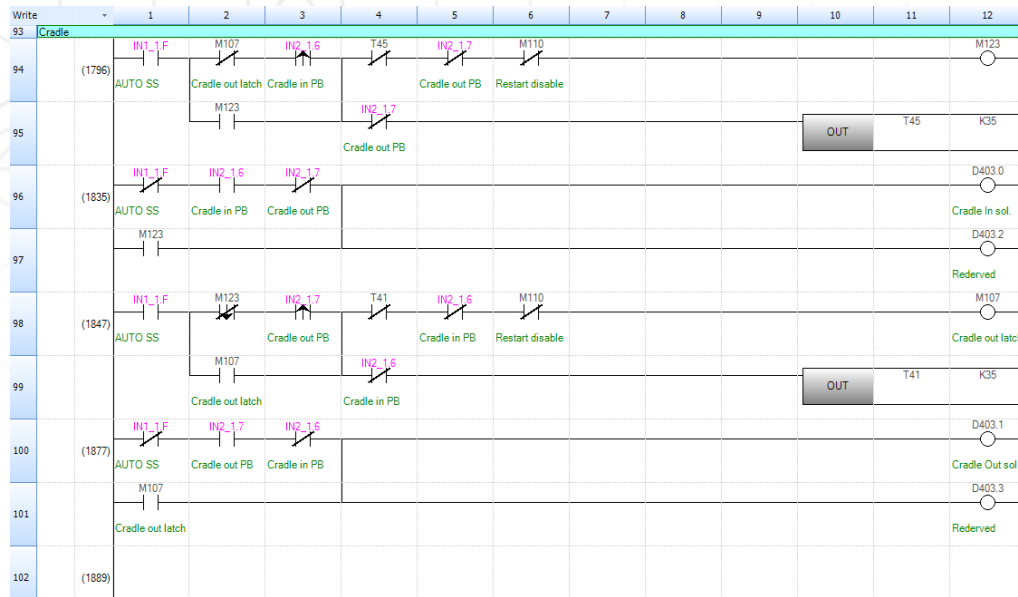


Use Case 1 Before

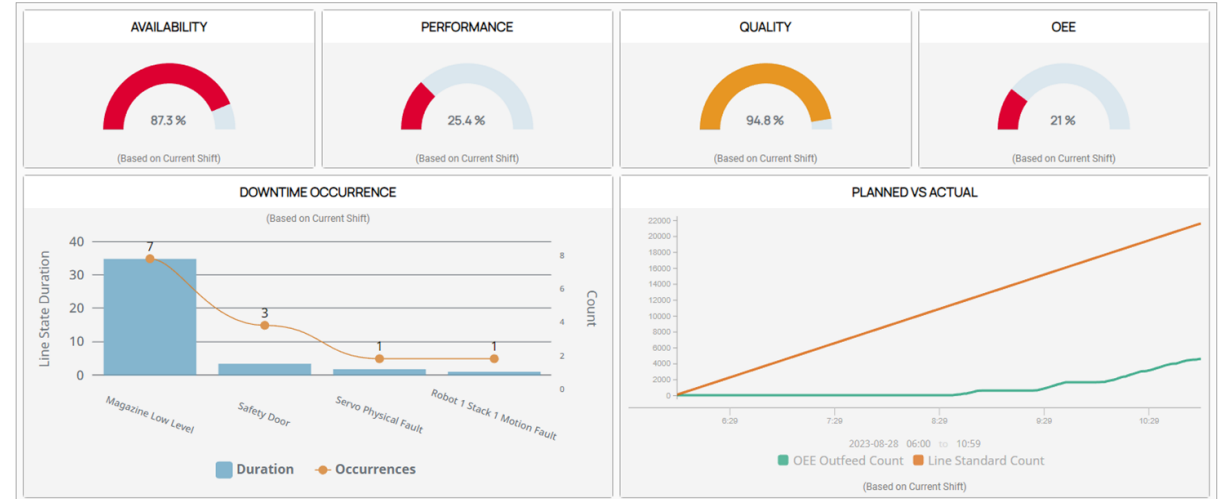


IO Monitor	PB	Reed SW	Solenoid output	Reed SW	PB
Exit Door	Down	Down	Down	Up	Up
Chin lifter	Down	Down	Down	Up	Up
Nose Paddle		IN	IN	Out	
Stun platform	IN	IN	IN	OUT	OUT
Neck Clamp1	IN	IN	IN	OUT	OUT
Neck Clamp2		IN	IN	OUT	
Shoulder Push	Down	Down	Down	Up	UP
Rump Push	IN	IN	IN	Out	OUT
Entry Door	Down	Down	Down	Up	Up
Belly Push		IN	IN	Out	OUT
Cradle	IN	IN	IN	Out	OUT

Use Case After



Dashboard



IO Monitor

EXIT DOOR	CHIN LIFTER	NOSE PADDLE	STUN PLATFORM
PB UP	PB UP		PB IN
Reed SW UP	Reed SW UP	Reed SW IN	Reed SW UP
Solenoid Output DOWN	Solenoid Output DOWN	Solenoid Output IN	Solenoid Output OUT
NECK CLAMP 1	NECK CAMP 2	SHOULDER PUSH	RUMP PUSH
PB OUT		PB UP	PB IN
Reed SW IN	Reed SW IN	Reed SW DOWN	Reed SW IN
Solenoid Output FAULT	Solenoid Output OUT	Solenoid Output DOWN	Solenoid Output OUT

Tag Browser

Mitsubishi Tags

Tags

UDT Definitions

Tag

Value

ESM

Cow Stunner

Counts

IO

OEE

Availability

OEE

Performance

Quality

0.99

0.78

0.86

0.92

Tag Editor

Availability

Mitsubishi Tags

Categories

All Properties

Basic

Meta Data

Value

Numeric

Security

Scripting

Alarms

History

Custom

Name

Tag Group

Enabled

Documentation

Tooltip

Value Source

Data Type

OPC Server

OPC Item Path

Availability

Default

true

OPC

Float

Ignition OPC UA Server

ns=1;s=[Cow Stunner]D<float=12280

OK

Apply

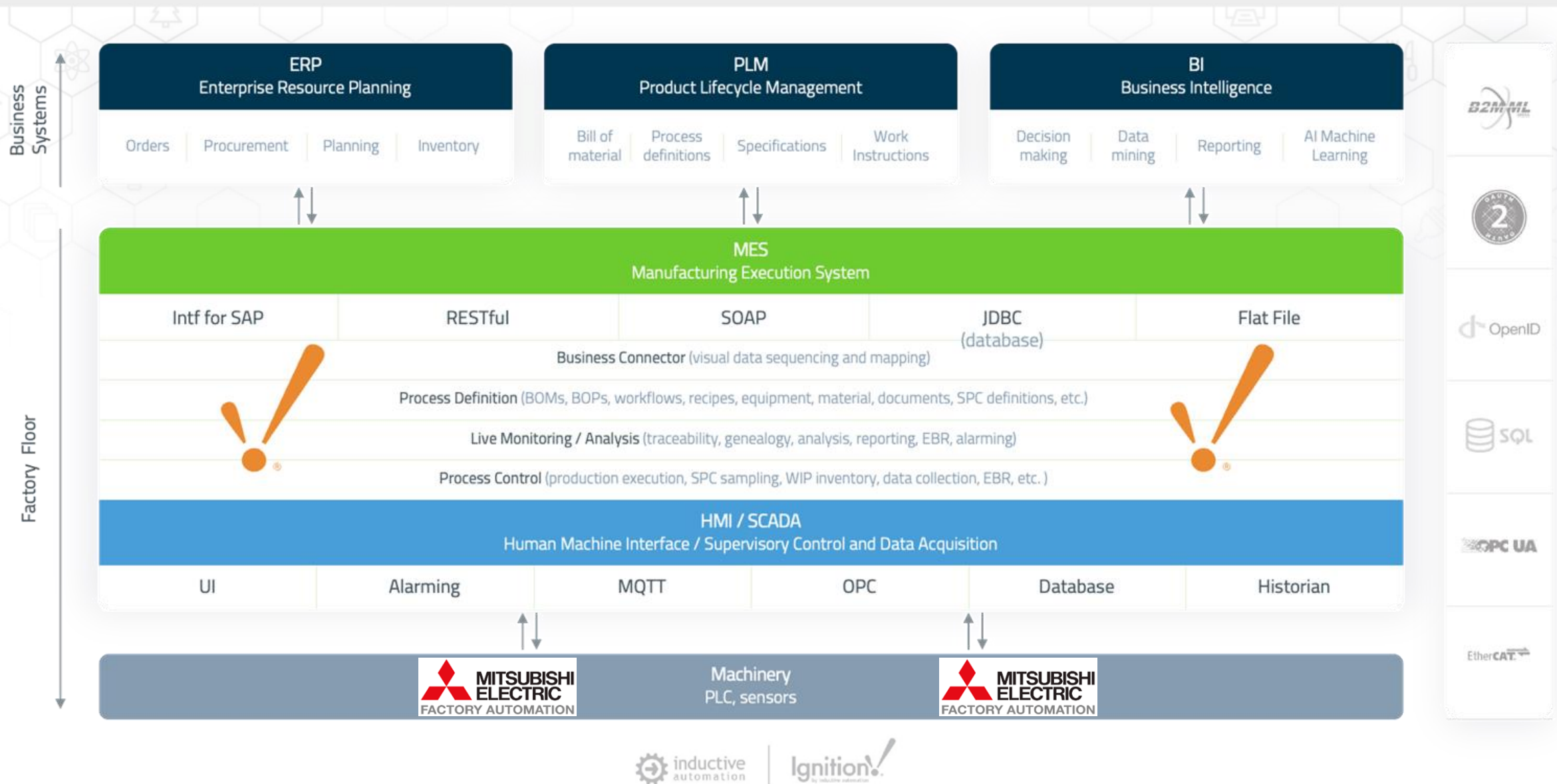
Cancel

Use Case 2

Connecting Legacy systems as part of DTx Initiative

- FX - Series - FX3U ENET
- **Q - Series CPU (Q03UCPU)** (No Ethernet)
- L - Series
- iQ-F (FX5)
- iQ-R

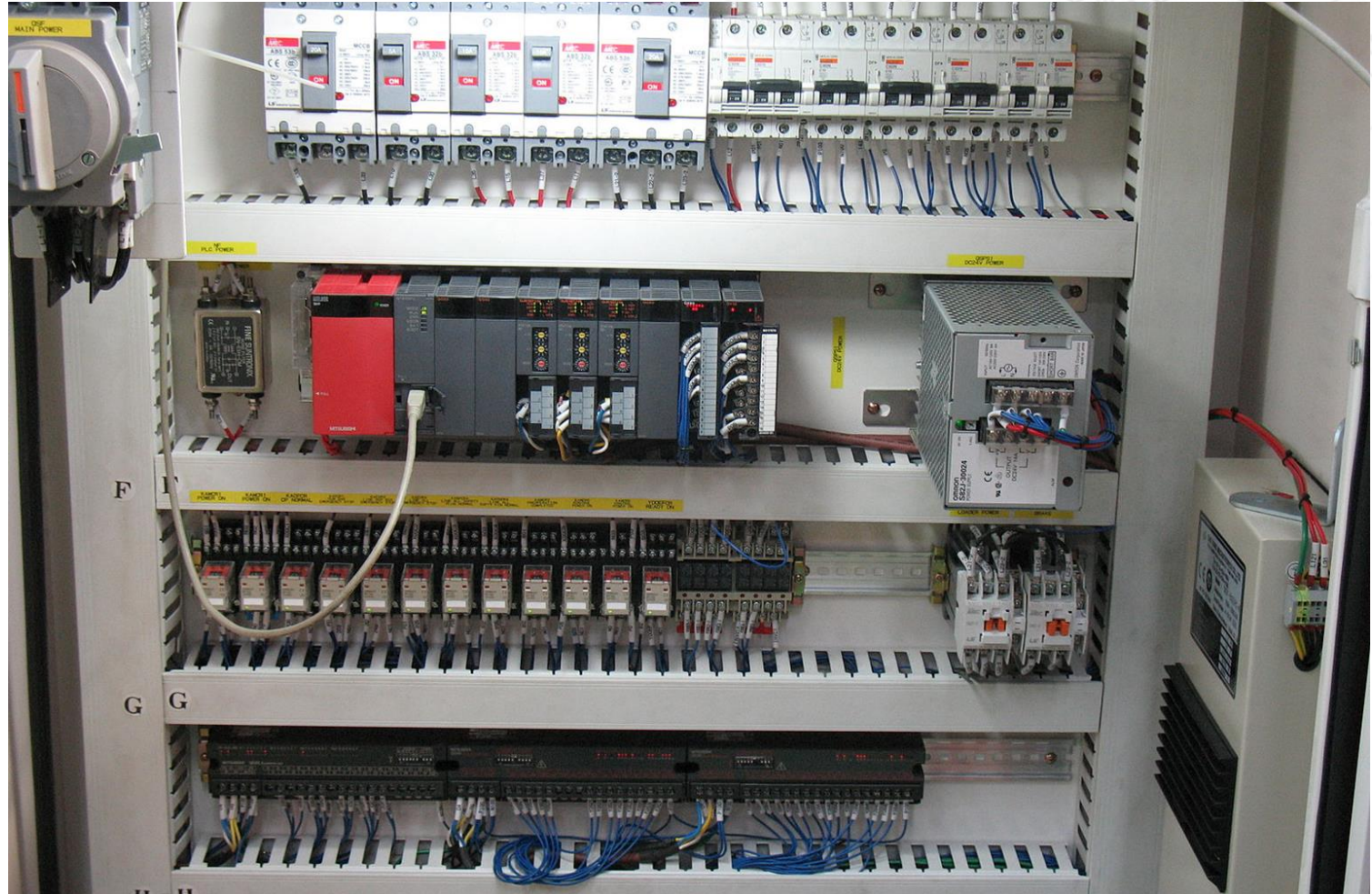
Use Case 2 - DTx



Use Case 2 - DTx

Legacy Controller
Q03UCPU - No Ethernet

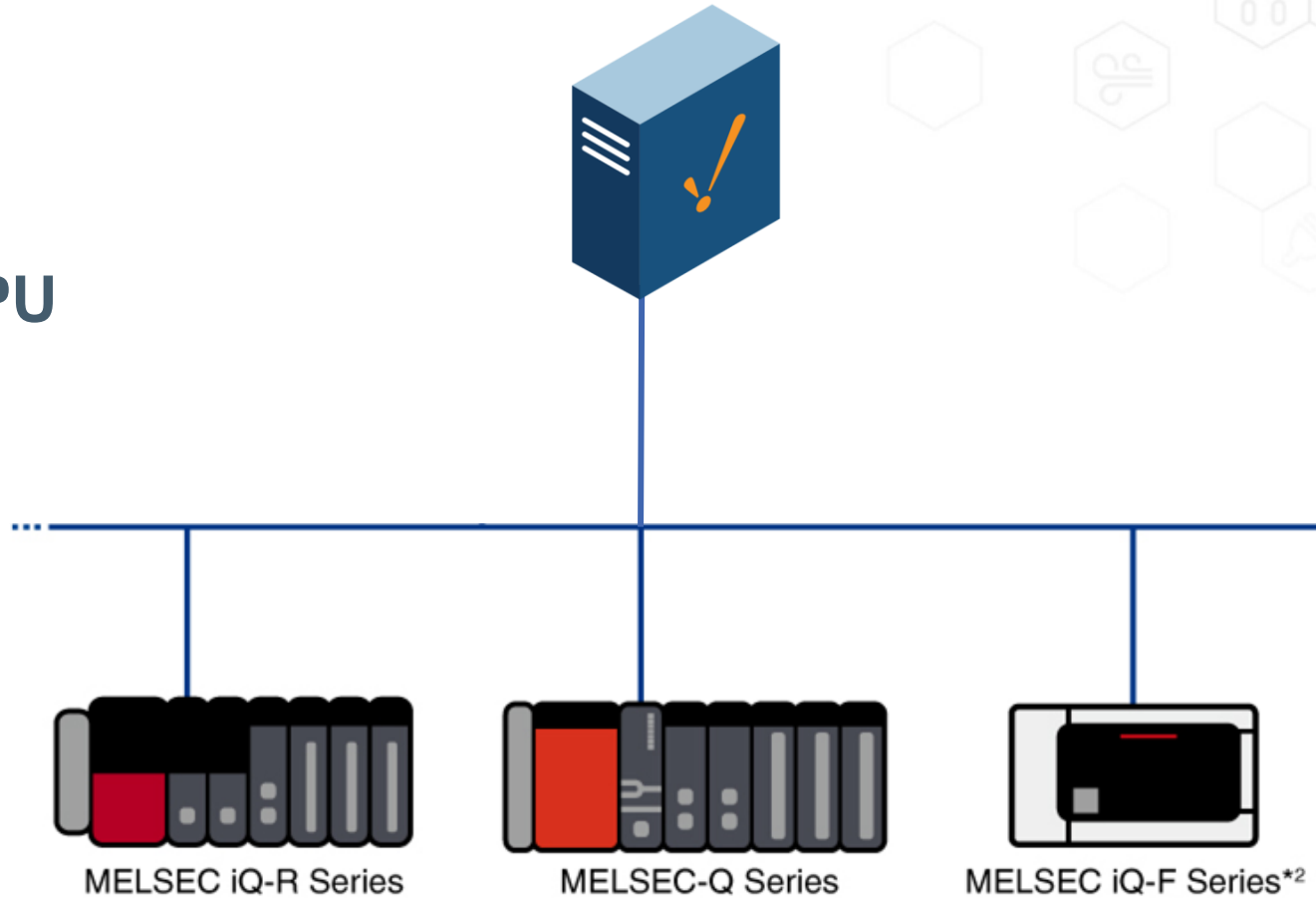
Upgrade CPU to **Q03UDECPU**
or
Add **QJ71E71-100** Ethernet



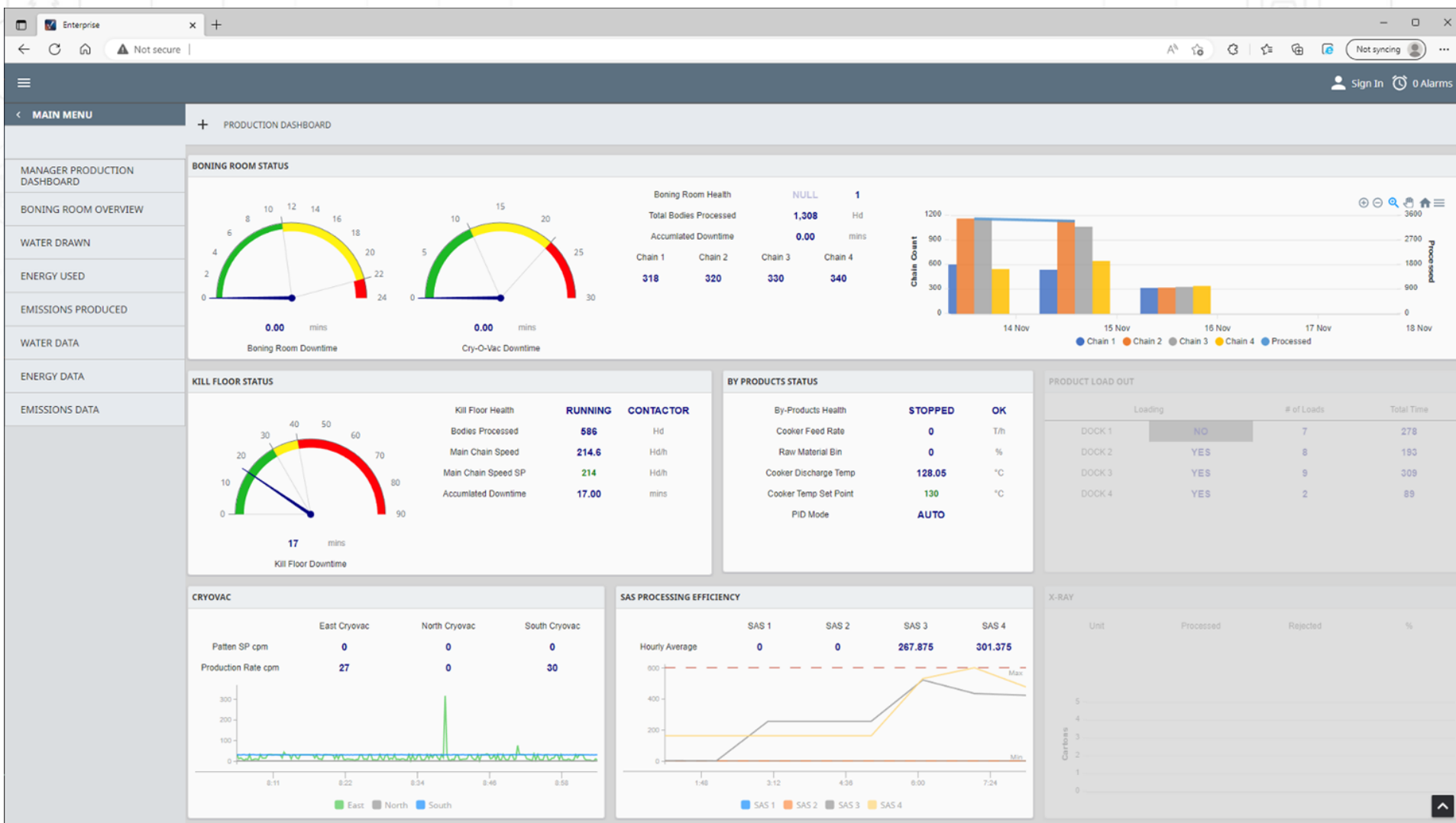
Use Case 2 - DTx

Legacy Controller
Q03UCPU - No Ethernet

Upgrade CPU to **Q03UDECPU**
or
Add **QJ71E71-100** Ethernet



Use Case 2 - DTx



Demo



Expanding Connectivity

Ignition Gives You the Tools to Connect

- The Mitsubishi Driver is only one of many tools built into Ignition to help you better use the hardware you already have.
- We are continually adding new features to Ignition to make connection even easier.



Ready to Try Ignition for Yourself?

Download the full version for free at:
inductiveautomation.com



inductiveuniversity.com

*Ignition User Manual also available at:
docs.inductiveautomation.com*



 ICC 2023

ELEVATE

September 26-28, 2023 in Folsom, CA

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