

LISTEN.
THINK.
SOLVE.®



*Plant*PAX

Process Automation System

DCS Migration to Plant PAX

Keith Staninger
Rockwell Automation

(Confidential – For Internal Use Only)



Industry Expertise...



Food

Optimize your limited human, physical and financial assets, minimize waste, and satisfy demanding consumers and retailers.

- Procter & Gamble
- Anheuser-Busch
- Coca-Cola
- Kellogg
- Philip Morris
- SAB Miller
- M&M Mars
- Nestlé



Beverage & Brewing

Optimize your limited human, physical and financial assets, minimize waste, and satisfy demanding consumers and retailers.

- Anheuser-Busch
- Coca-Cola
- SAB Miller
- Carlsberg
- Heineken
- InBev
- Pepsi Co.



Life Sciences & Pharma

Reduce costs while meeting the demands of ever-changing compliance regulations.

- Pfizer
- Eli Lilly
- Wyeth-Aherst
- Johnson & Johnson
- Merck
- Abbott Laboratories
- Sanofi

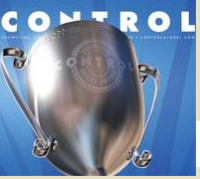


Petroleum & Chemical

React to changing production conditions, while maintaining your plant at peak efficiency.

- ConocoPhillips
- Dow Chemical
- Exxon/Mobil
- Grupo Mexico La Caridad
- Shell
- DuPont
- Eastman Kodak
- PDVSA
- Chevron
- BP

Rockwell Automation has deep industry expertise in project delivery.....



2010 “Industry” Awards

RA Takes Industries from EMR, INV, and SIE

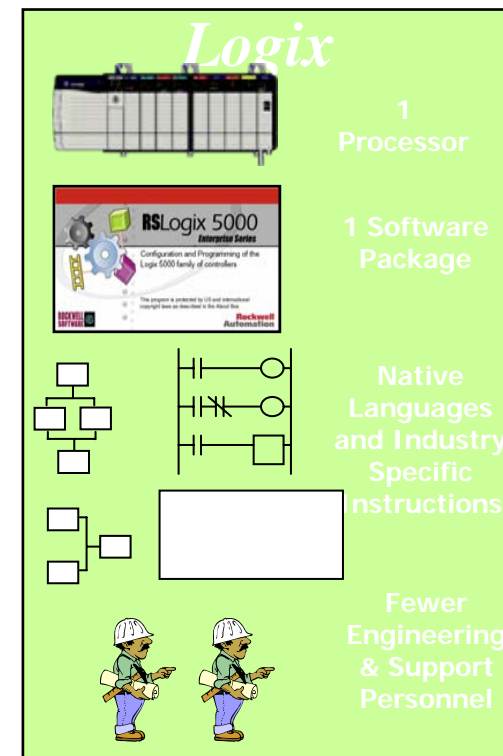
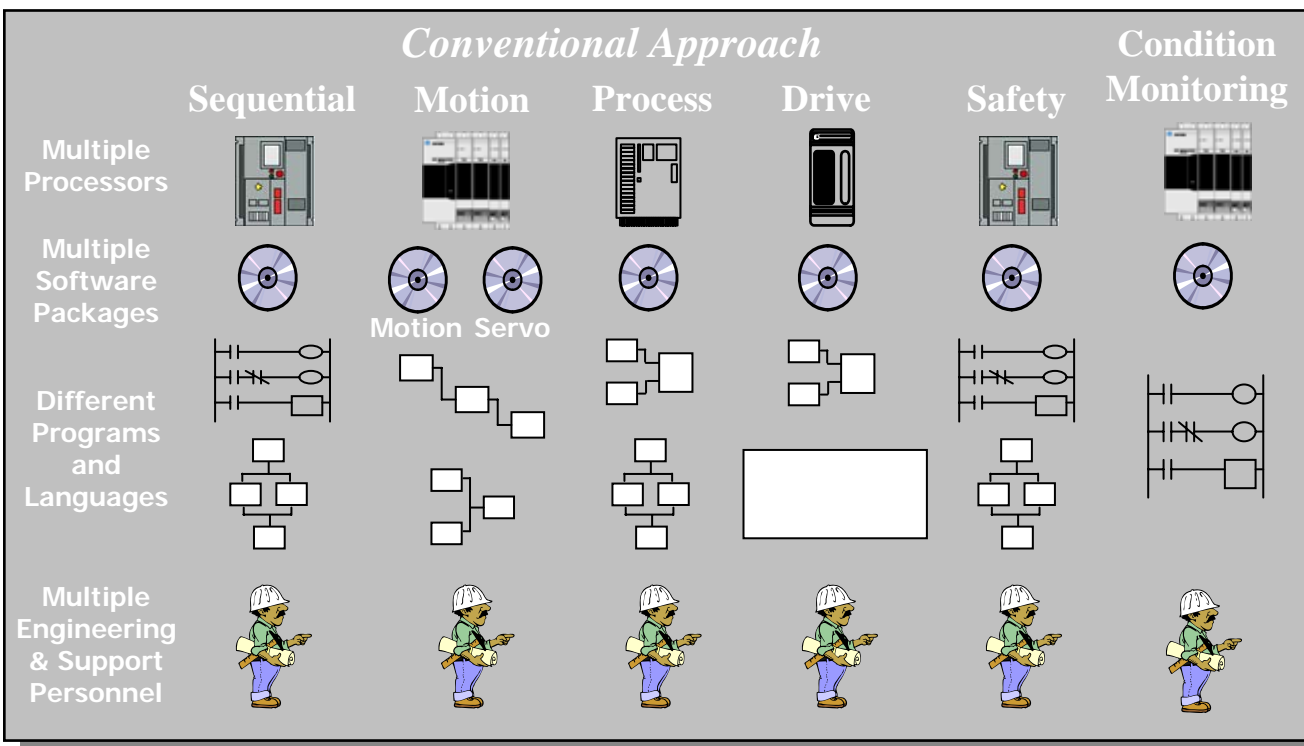
	Chemicals Mfg	Electric Power Generation	Food & Beverage Mfg	Metals, Minerals & Mining	Oil & Gas Extraction	Petroleum Refining	Pharma & Life Sciences	Plastics & Rubber Mfg.	Pulp & Paper Mfg	Water & Wastewater Processing
Continuous Regulatory Control	Emerson Process Mgmt.	Emerson Process Mgmt.	Rockwell Automation	Rockwell Automation	Emerson Process Mgmt.	Honeywell	Emerson Process Mgmt.	Emerson Process Mgmt.	Emerson Process Mgmt.	Rockwell Automation
Batch Process Automation	Emerson Process Mgmt.	Rockwell Automation	Rockwell Automation	Rockwell Automation	Rockwell Automation ⁺¹ (previously Emerson)	Honeywell (previously Emerson)	Emerson Process Mgmt.	Emerson Process (previously Rockwell) ⁻¹	Rockwell Automation	Rockwell Automation ⁺¹ (previously Emerson)
Continuous Sheet/Web Monitoring & Control	Honeywell	No winner	No winner	Rockwell Automation	No winner	No winner	No winner	Honeywell	ABB	No winner
Safety / Emergency Shutdown	Invensys Process Systems	Rockwell Automation ⁺¹ (previously Invensys)	Rockwell Automation	Rockwell Automation ⁺¹ (previously Siemens)	Invensys Operations Management	Invensys Operations Management	Rockwell Automation	Rockwell Automation	Invensys Operations Management	Rockwell Automation
Sequential Logic Control	Rockwell Automation	Rockwell Automation	Rockwell Automation	Rockwell Automation	Rockwell Automation	Rockwell Automation	Rockwell Automation	Rockwell Automation	Rockwell Automation	Rockwell Automation

- RA is chosen as outright winner in 6 of 10 process industries & tied in 2 more!
 - Gained four new industry categories in 2010 (net gain of 3)
 - EMR received fewer industry 1st place finishes (net loss of 2)

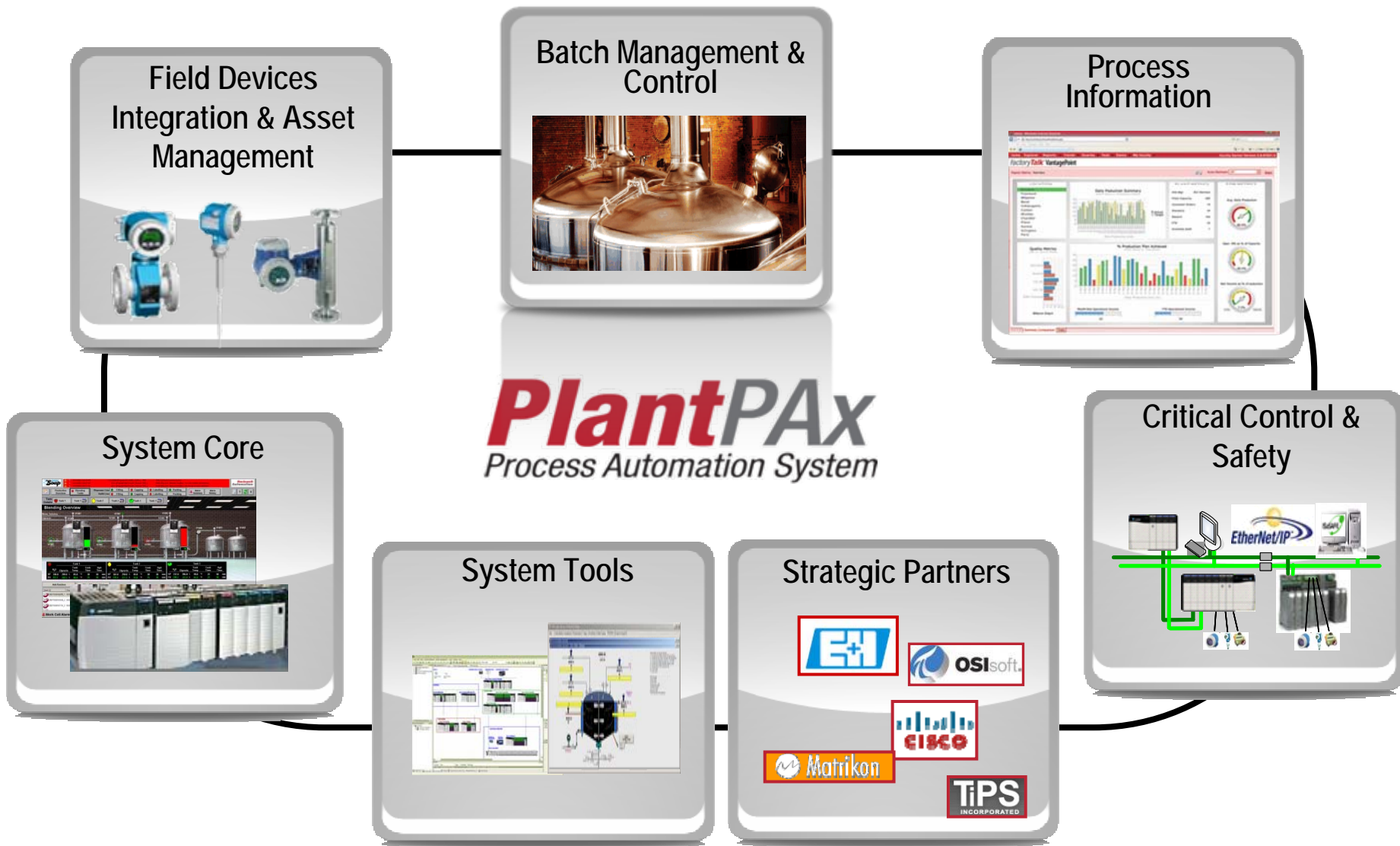
What is the Value of Integrated Architecture?

- Control sequential, motion, safety, process, drives, and condition monitoring within a single control platform (or single controller if desired).
- One Software Package for Structured Text, Function Block, Ladder, and SFC
- High Availability of Resources...Ocean of Talent
- Lowest Total Cost of Ownership

PlantPAX
Process Automation System



Our Process Automation System



PARTS + CSA (CRITICAL SYSTEM ATTRIBUTES DEFINED) + TESTING = SYSTEM

PlantPAX represents:

1. A scalable portfolio unifying the Rockwell Automation investments that enhanced process technologies, solutions and services
2. A Process Control core based on the widely adopted Rockwell Automation Integrated Architecture technologies for plant-wide control
 3. A core system with defined performance, i.e. a “characterized” system
4. Accompanying tools and utilities that accelerate the implementation of a process automation system
5. And, a healthy road map of planned new features, enhancements and expansion of system capacities

PlantPax - Six Key Areas of System Development

6

Operations Productivity



- Optimization
- Decision Support
 - Historian
 - Batch Mgmt.



1

Core Process Control

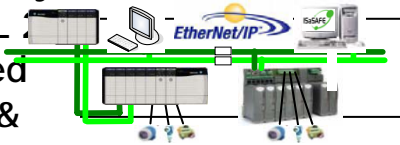
- Distributed HMI
- Logix control
- System Bundle



5

High Availability

- Logix - SIL
- Integrated Control & Safety System



2

Design Productivity

- System View
- Process Library



4

Asset Management

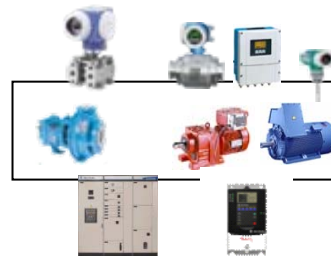
- FT AssetCentre
- Process Device Mgmt
- FDT/DTM adoption



3

Field Device Integration

- E+H devices
- Metso valve
- Drives / MCC

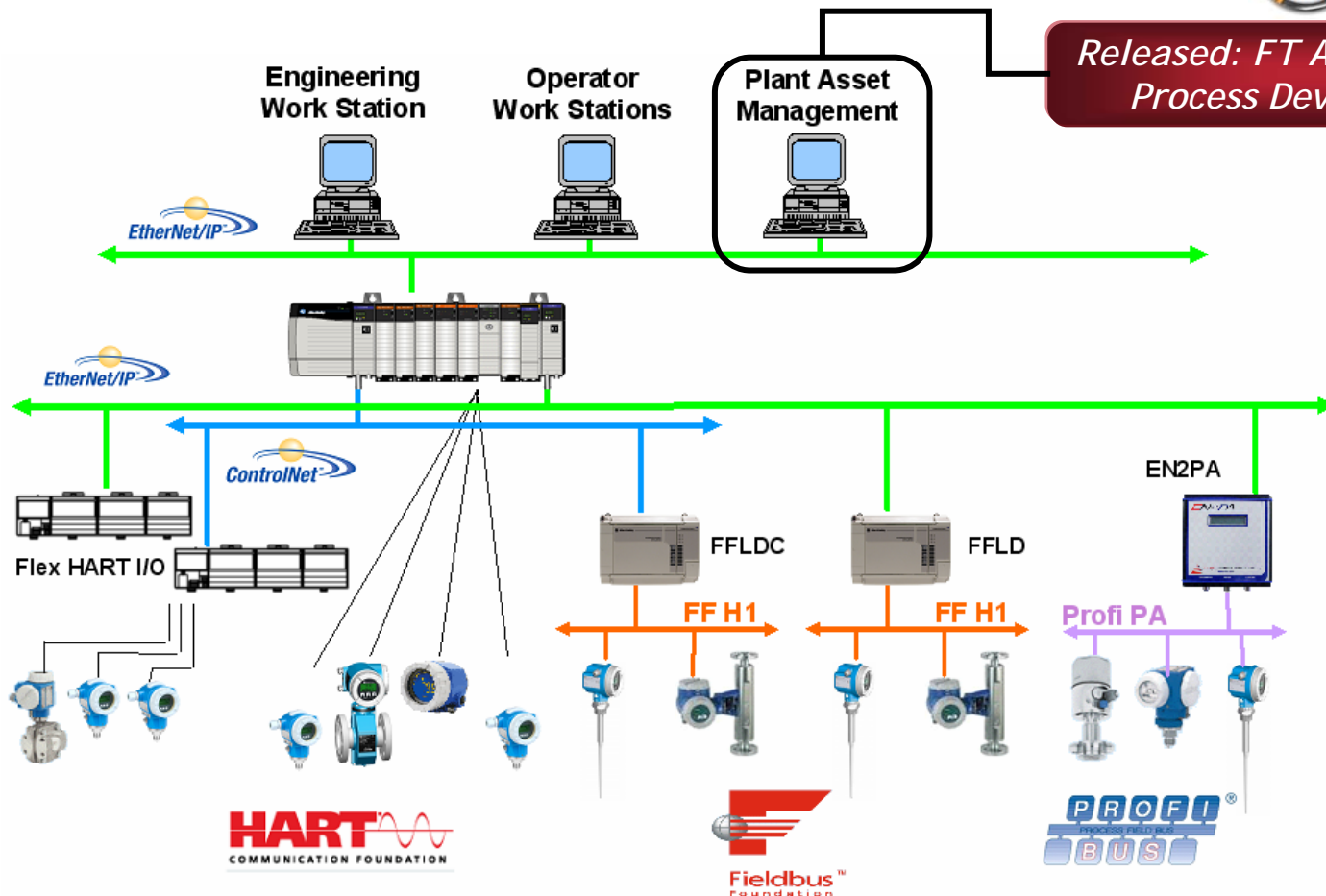


Field Device Integration

FactoryTalk[®]
AssetCentre

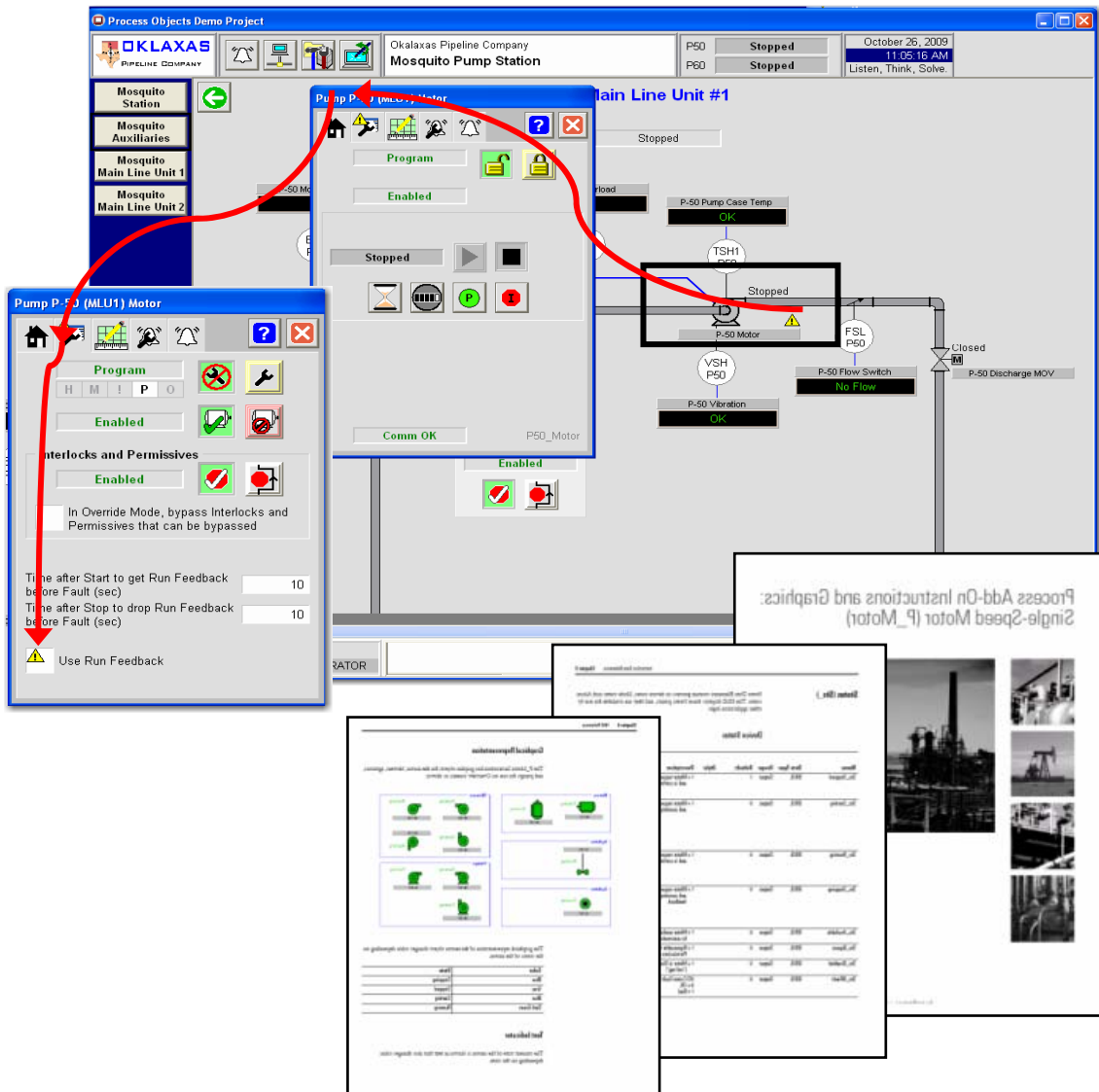


*Released: FT AssetCentre -
Process Device Mgmt*



Preferred integration with E+H process instruments

Reusable Library for Design Productivity



- Suite of Control & HMI objects to accelerate project engineering
- Built-in troubleshooting features
- Value-added “bread crumbs” for operators

Gaps closed vs. Emerson & Siemens process systems

Plant PAX System Characterization - Standardizes Capacity and Ensures Optimal Performance



Distributed System - Tested

- Process Areas: 4
 - Clients: 32
- Control Loops: 6000
 - Controllers: 50
 - Points: 50,000
 - I/Os: 80,000

Critical System Attributes

- Display Update: < 1 sec
- Steady State Alarms: > 20/sec
 - Alarm Burst: < 3 sec/1000 alarms
- Alarm Resolution: 1 sec timestamp
- Keyboard Entry: < 1 sec to controller
- Control Loop Closure: < 100msec







Why Migrate?

- “Our control system is obsolete and needs to be replaced.”
- “Any interruption in production is an interruption in revenue. We cannot afford a shutdown... unplanned or extended scheduled”
- “We cannot simply rip and replace. We need a migration plan that will minimize downtime and meet our budget constraints.”

20 Year Total Cost of Ownership Analysis

- Service Support Contracts
- Extended Warranty
- Spare Parts or Parts Management Agreements
- Client Maintenance and Support Personnel Costs
- 3rd Party Engineering/Configuration/PM Costs (Hourly Rates)

Example DCS Platforms

DCS Platform	Dominant Industries	Typical Age of System	Key RA Value
	<ul style="list-style-type: none"> • Power • W/WWT • Mining 	<ul style="list-style-type: none"> • 25 - 30 years 	<ul style="list-style-type: none"> • In-chassis (1756) dedicated interface cATM-BLY90
	<ul style="list-style-type: none"> • Spec Chem • Life Science • Metals 	<ul style="list-style-type: none"> • 20 - 25 years 	<ul style="list-style-type: none"> • In-chassis (1756) I/O Scanner for S10/S20 I/O
 TDC 2000, 3000, IPC, PIScape	<ul style="list-style-type: none"> • Metals & Mining • Pulp & Paper • Oil & Gas 	<ul style="list-style-type: none"> • 25 - 30 years 	<ul style="list-style-type: none"> • In-chassis (1756) I/O Scanner for IPC620 Serial I/O
 Foxboro IA	<ul style="list-style-type: none"> • Power • Pulp & Paper • Oil & Gas 	<ul style="list-style-type: none"> • 20 - 25 years 	<ul style="list-style-type: none"> • Nosecone Adapter Cabling Solution for FBM100 Series I/O

Benefits, Pros, and Cons of each migration strategy

Phased

Rip and Replace

• Legacy
Delivery

- Requires less Legacy DCS

Bailey Migration Tools and Assistance

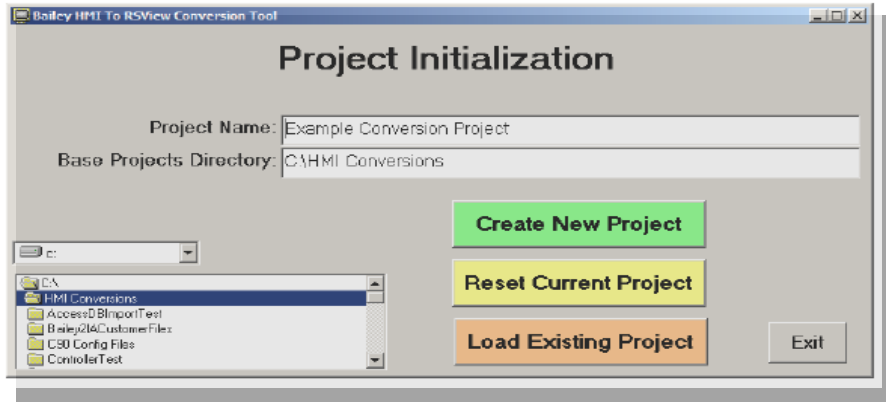


OPC90™ OPC Server for Bailey

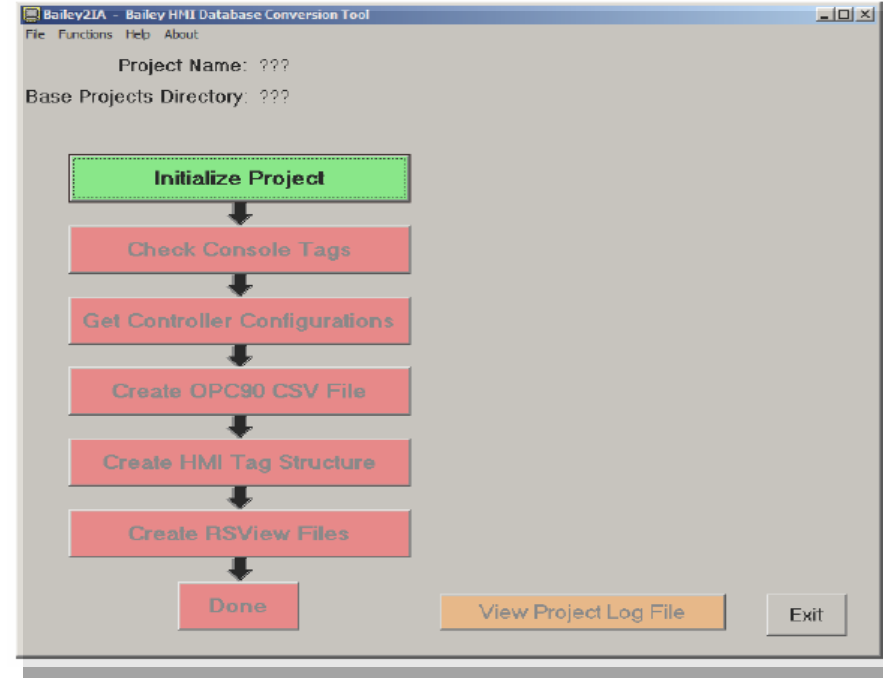


- For use in architectures using “whitebox” PC’s
- Can be loaded directly on FTView Server
- Used for HMI Console replacement projects

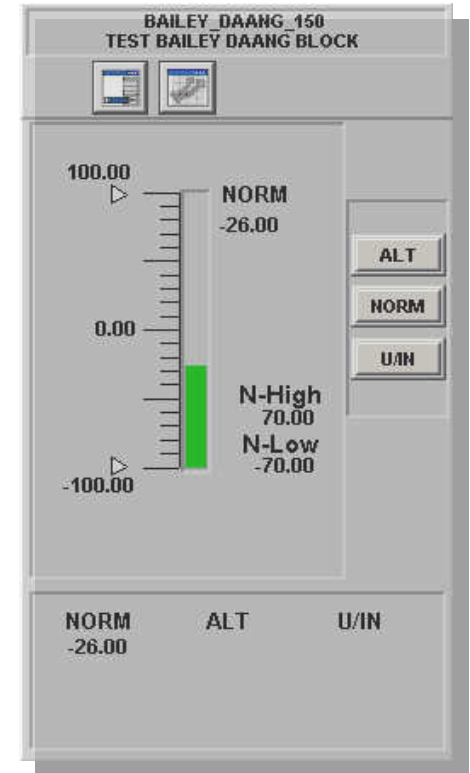
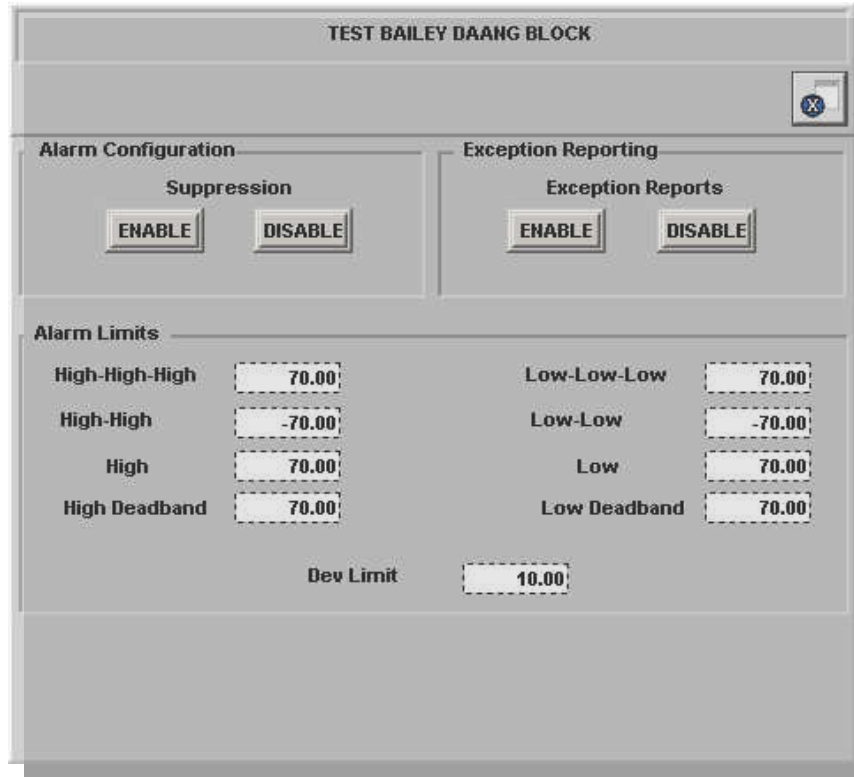
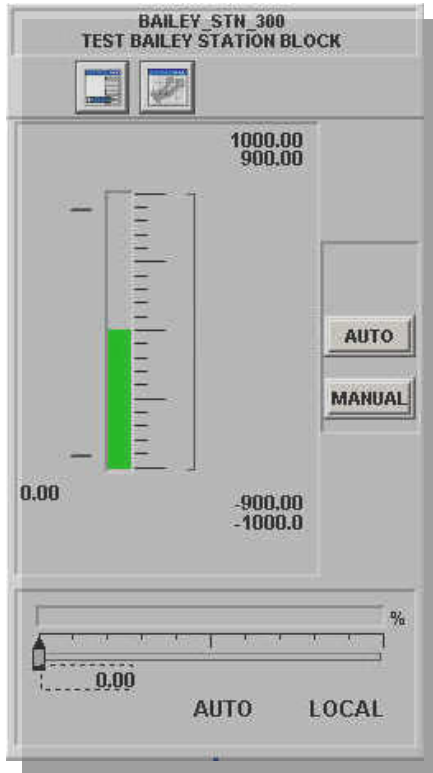
Bailey Database Conversion Tool



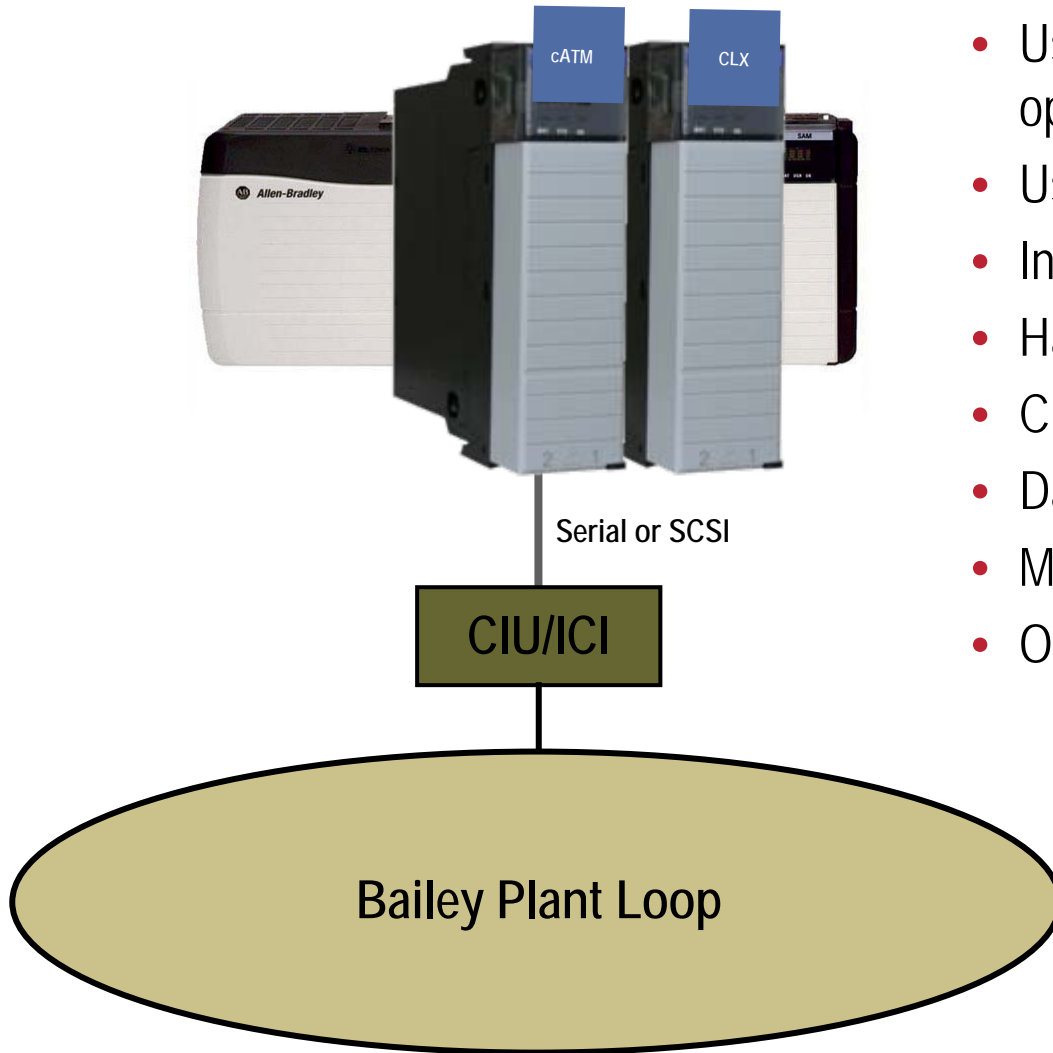
- Converts Bailey Console DB tags to FTView OPC tags
- Used in conjunction with Rovisys OPC90 OPC Server and (whitebox) PC



Bailey Custom Faceplate Library



Bailey to CLX: RA56-cATM-BLY90 (from Online Development)

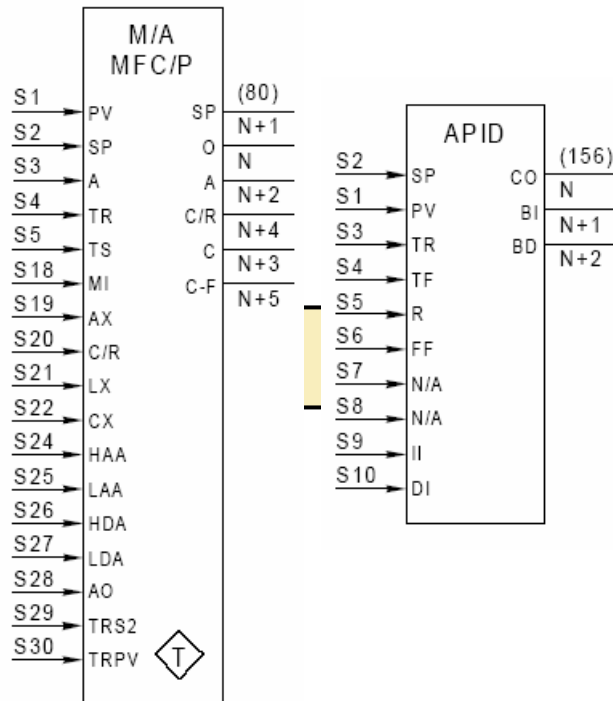


Benefits

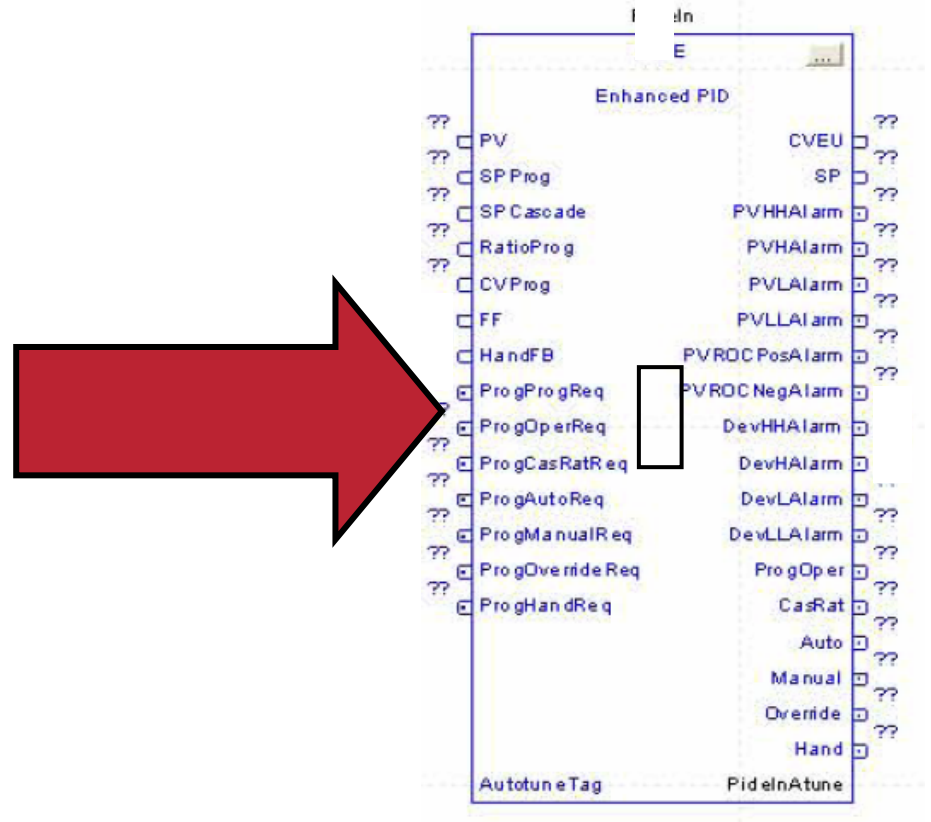
- Used for HMI Console replacement opportunities (<40K tags)
- Used for Peer to Peer comms
- Increases performance
- Has same environmental specs as CLX
- CLX is Data repository
- Data is native to FTVIEW, Historian, etc
- More integrated solution
- Optimized data server

Bailey to CLX - Control Strategy Libraries

Bailey PID



CLX PIDE

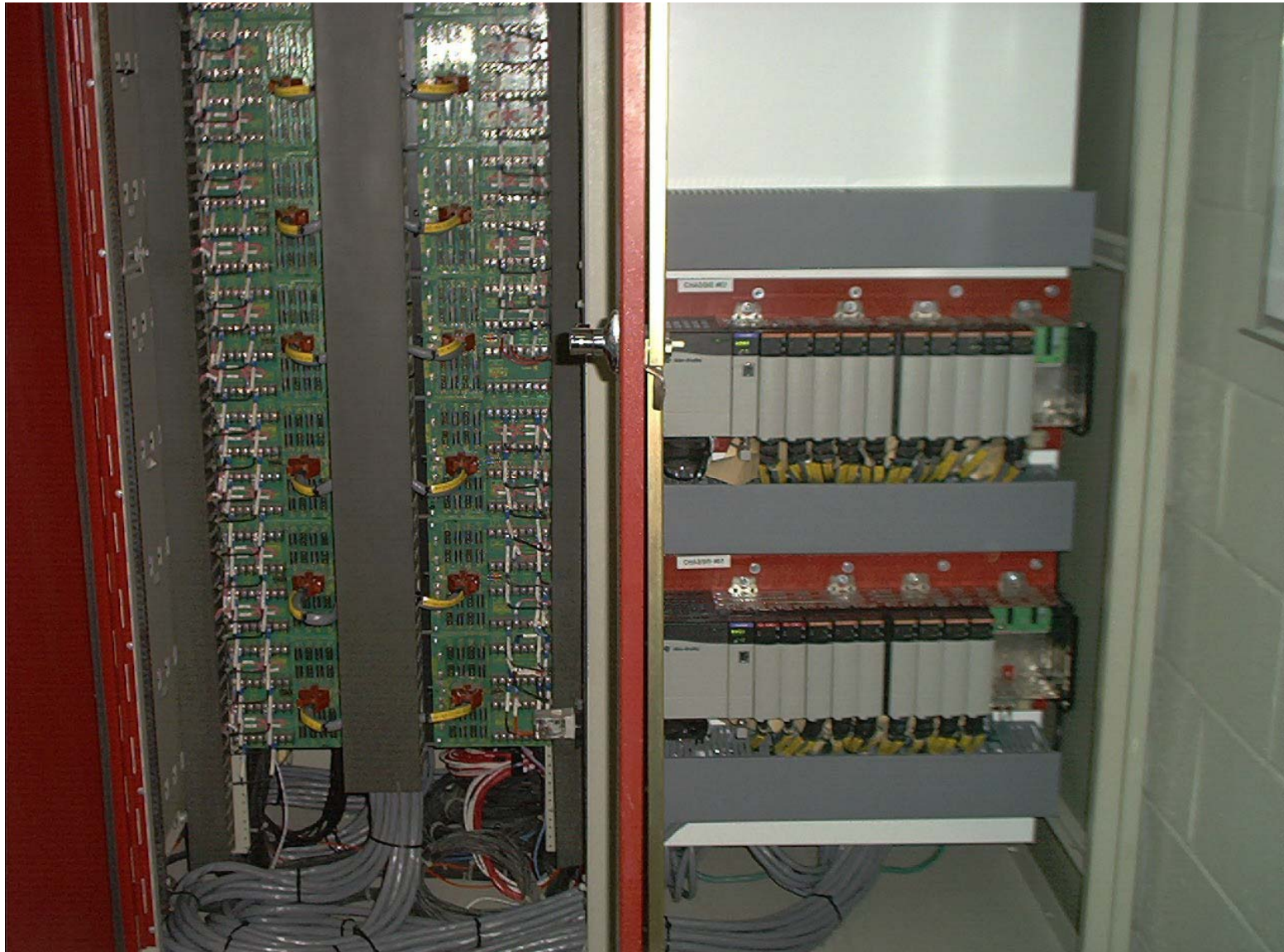


Bailey Custom Cable Solutions

Available to End users and
all Engineering partners thru
Flex Factory



Bailey DCS Migration - Custom Cable Solution



Honeywell TDC Migration Tools and Assistance



Matrikon OPC Server for Honeywell App Node

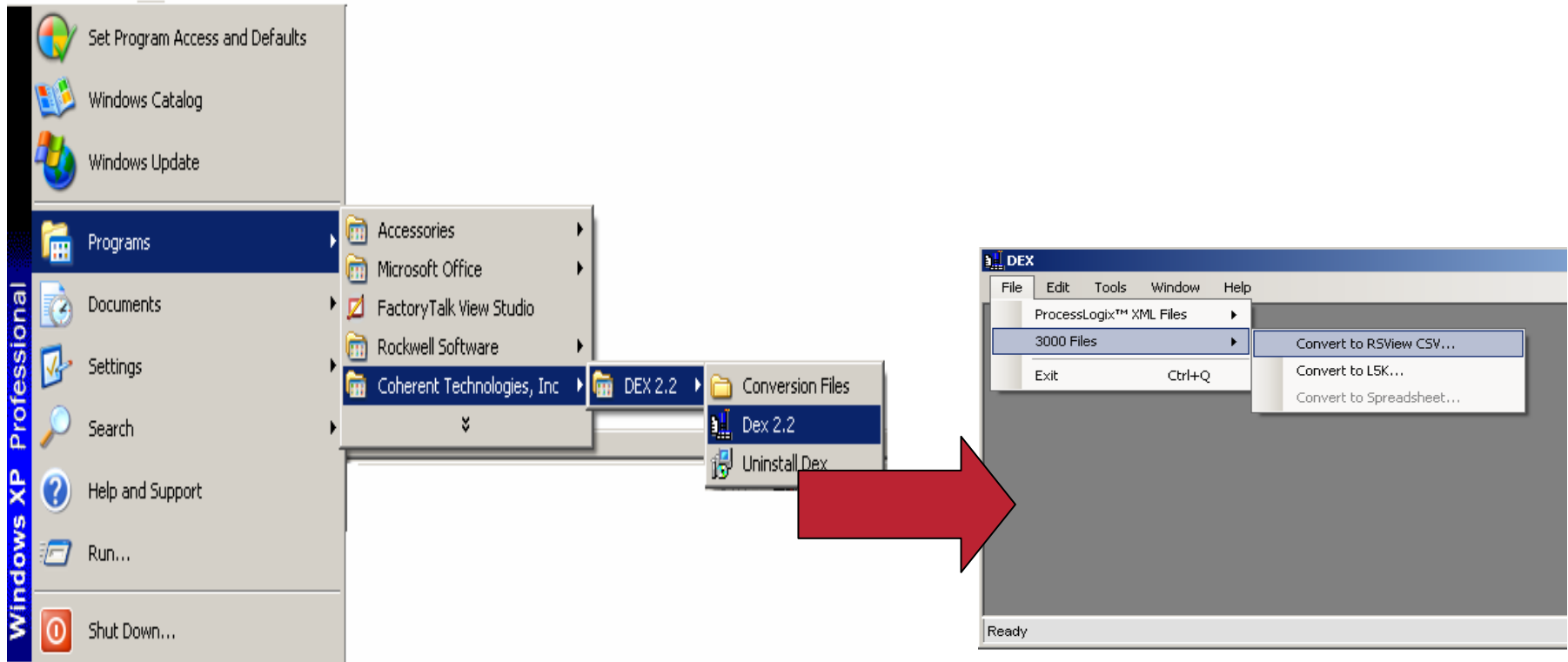
MatrikonOPC

• We make connections!

- For use in architectures using “whitebox” PC’s
- Can be loaded directly on FTVIEW Server
- Used for HMI Console replacement projects

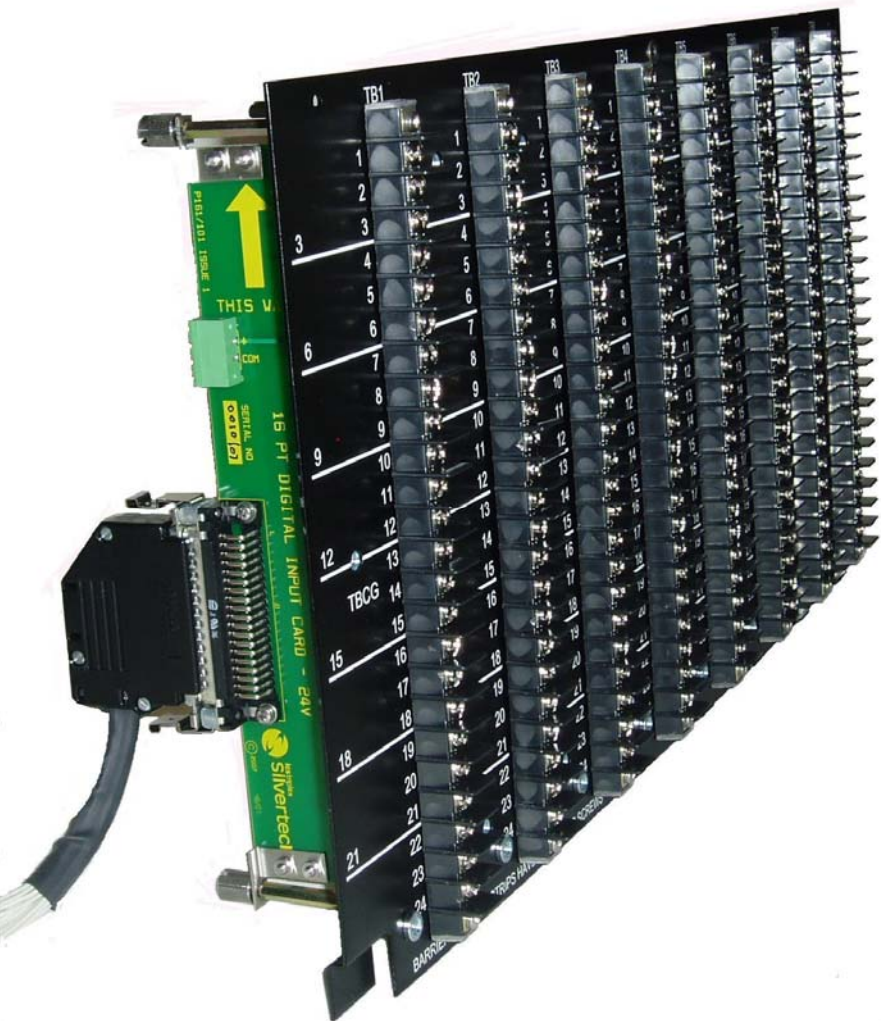
Available at:
www.matrikonopc.com

Honeywell TDC Database Conversion Tool



TDC2000 HLPIU Custom Adapter

Front View



Rear View



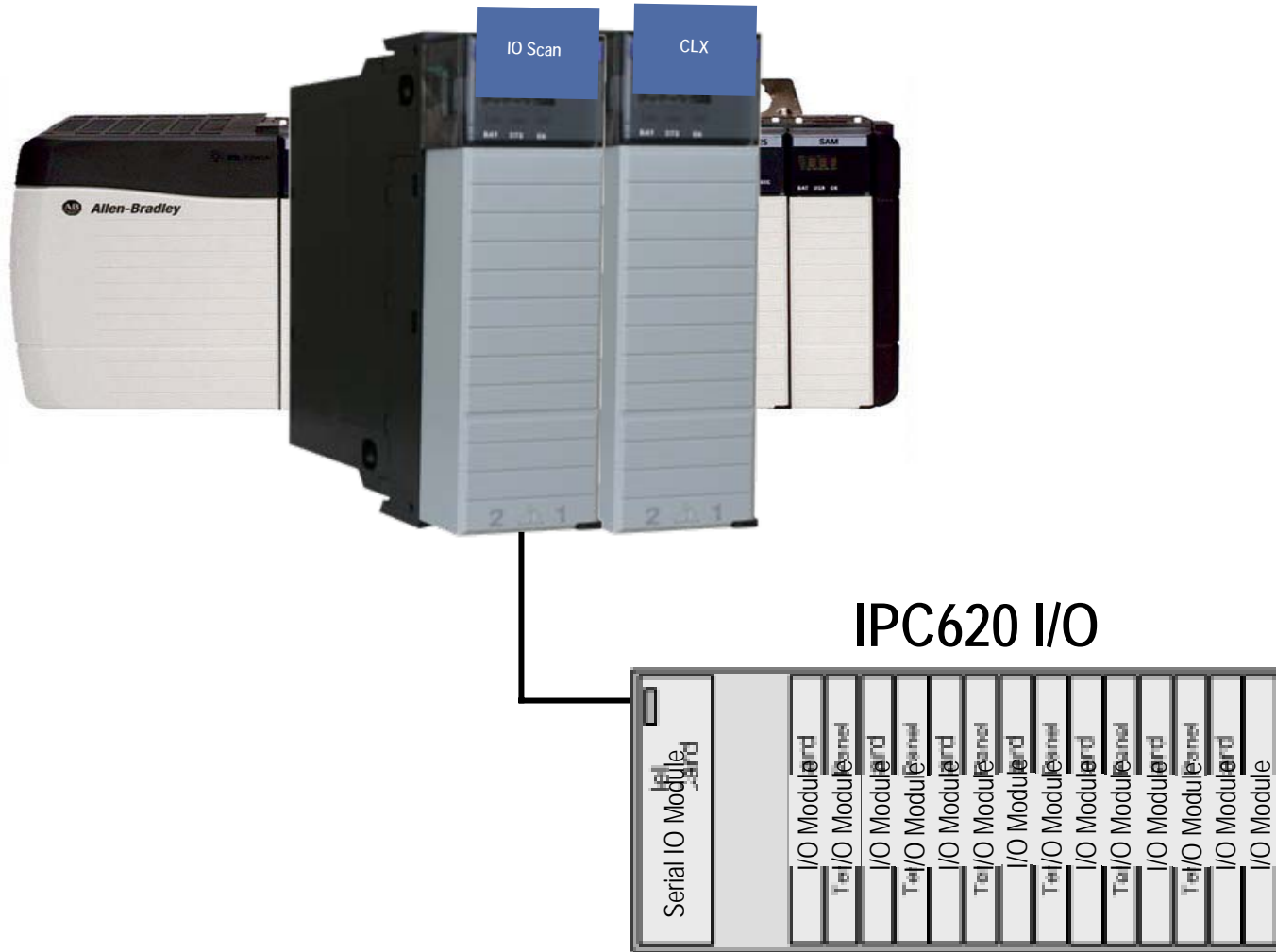
For Honeywell ST3000 Instrumentation: ProSoft DE



Supported Honeywell instruments include:

- ST 3000 smart pressure transmitter
- STT 3000 smart temperature transmitter
- SMV 3000 smart multivariable transmitter
- MagneW 3000 smart magnetic flowmeter
- SCM 3000 smart coriolis mass flowmeter
- SGC 3000 smart gas chromatograph

Honeywell IPC620 IO Scanner for CLX: CLX-422-IPC



TDC2000/3000 Custom Cables



Fisher Provox Migration Tools and Assistance



Matrikon OPC Server for Fisher ProVox

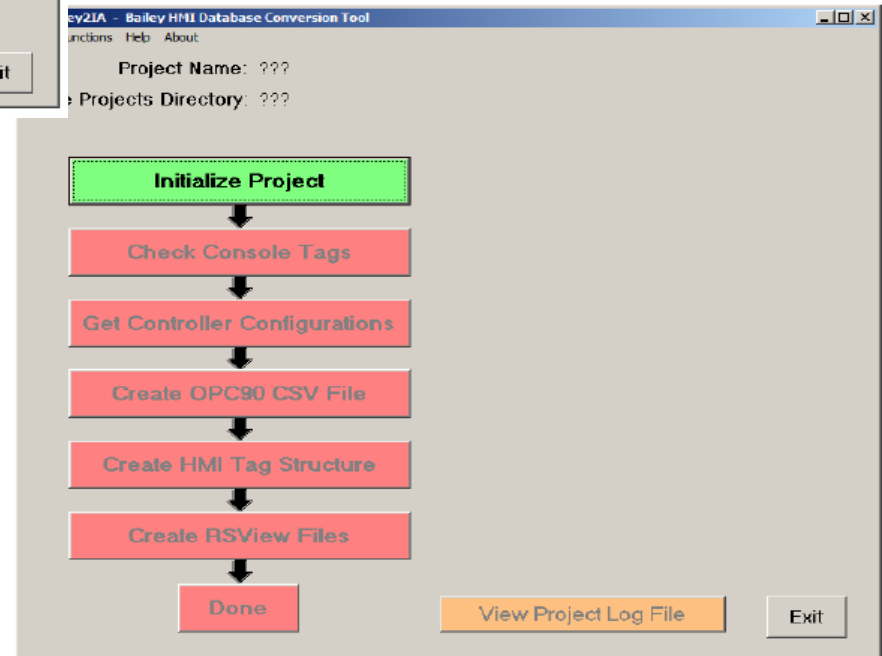
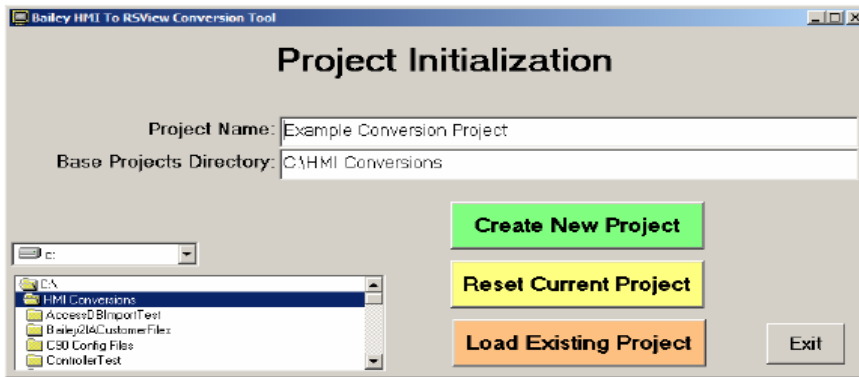
MatrikonOPC

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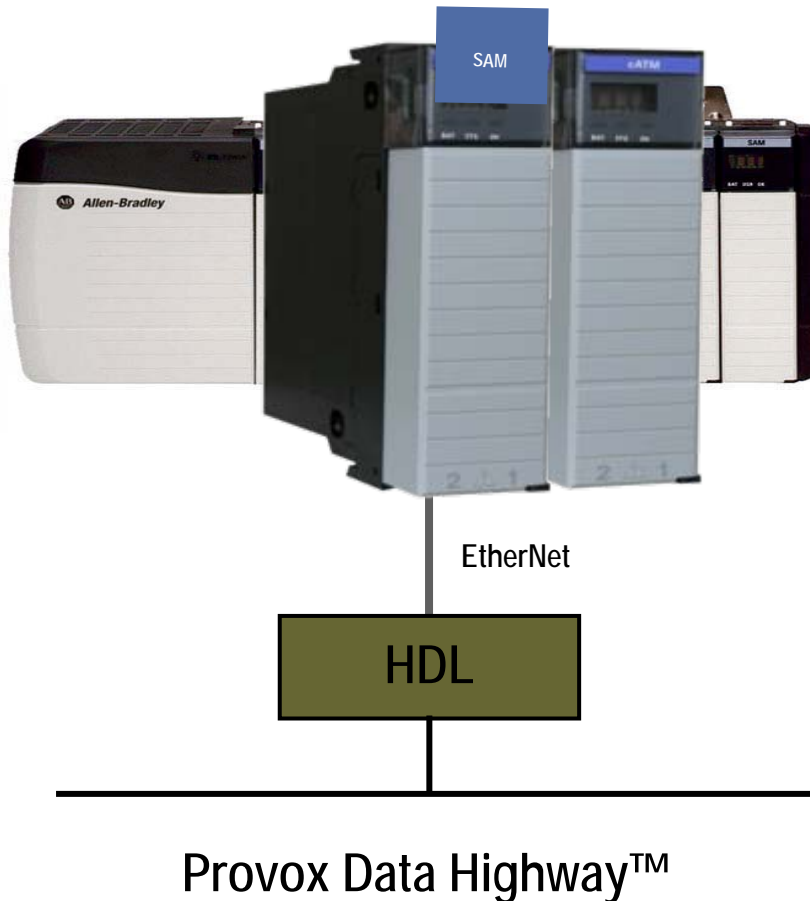
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Fisher ProVox Database Conversion Tool



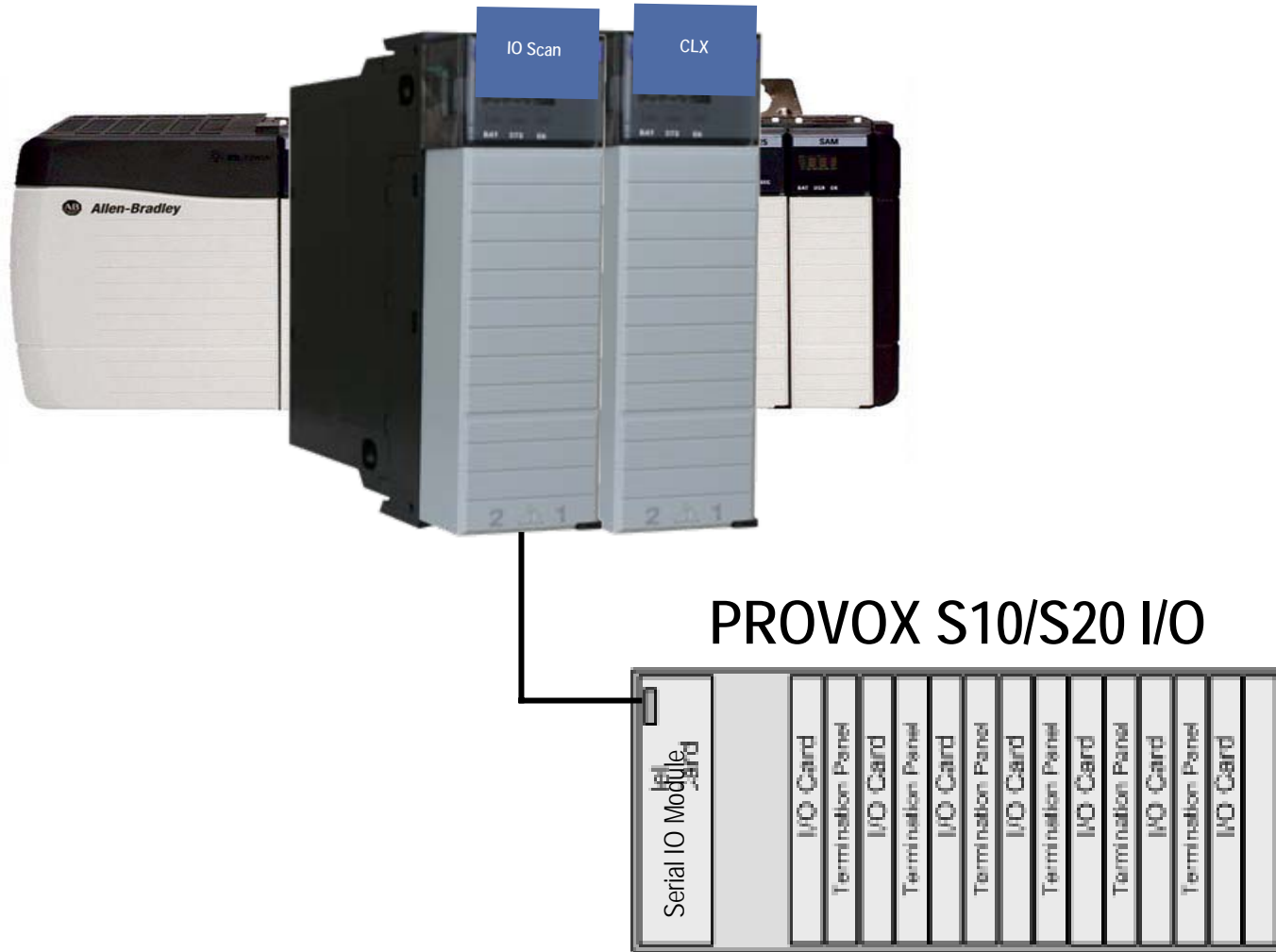
PROVOX Data Highway to CLX Interface



Benefits

- Eliminates IT issues by eliminating “White Box” OPC Server
- Simplifies Architecture by reducing PC counts
- Eliminates OPC Server DCOM issues
- Data is produced by CLX for FTView SE
- More integrated connection to CLX for fast data acquisition
- No “throw away” engineering from phase 1 to phase 2 migrations
- Deploys commercially available OPC technology
- SAM is supported by Rockwell Tech Support

Fisher PROVOX S10/S20 IO Scanner



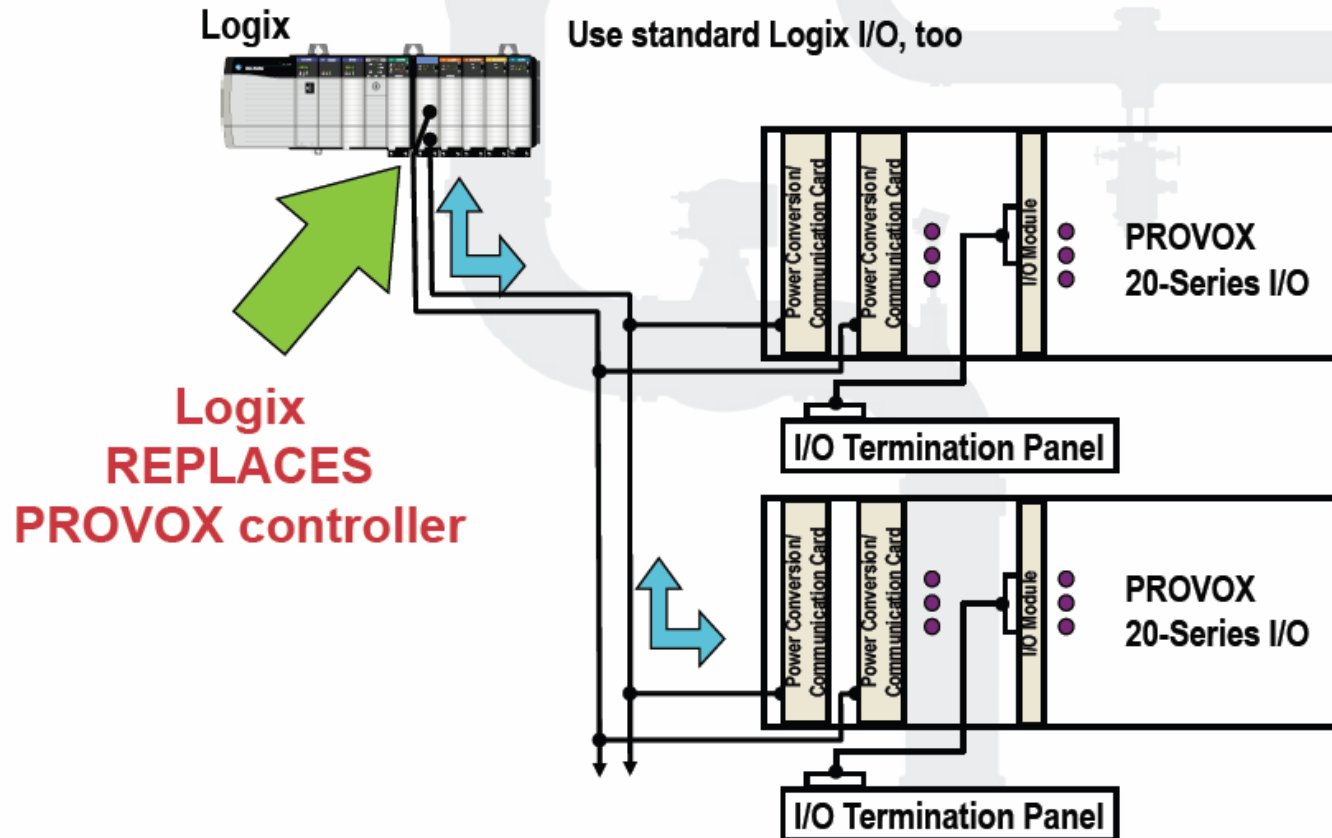
Fisher Provox Custom Cables



Provox Example



PROVOX I/O Scanner Module in MASTER Mode (Logix has full control of PROVOX I/O)



Foxboro IA Migration Tools and Assistance



Matrikon OPC Server for Foxboro IA Object Manager

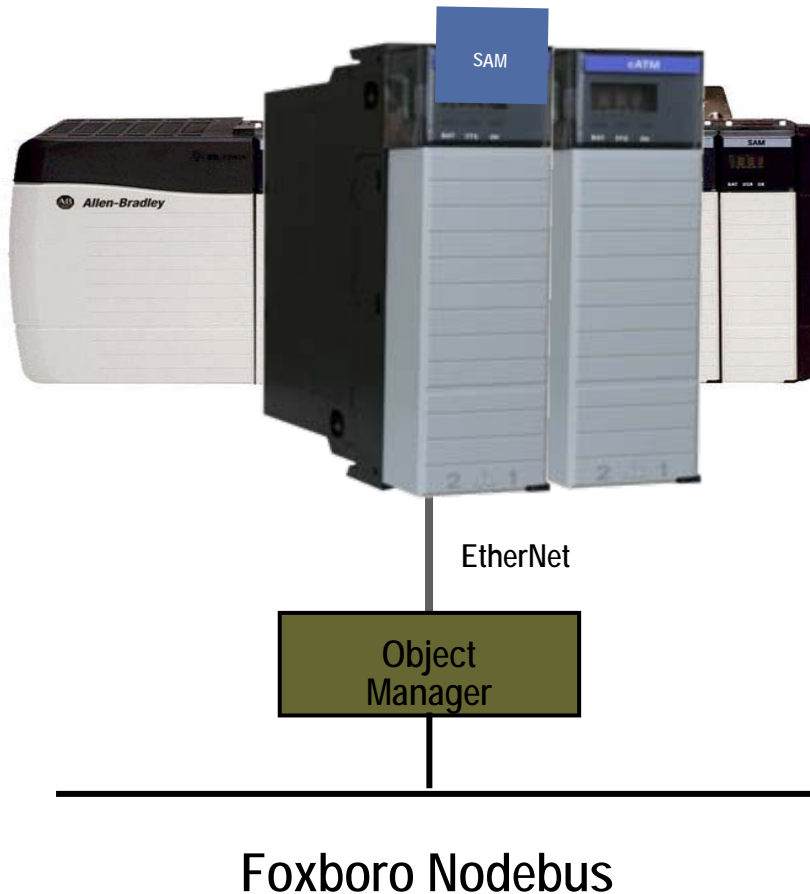
MatrikonOPC

• We make connections!

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Available at:
www.matrikonopc.com

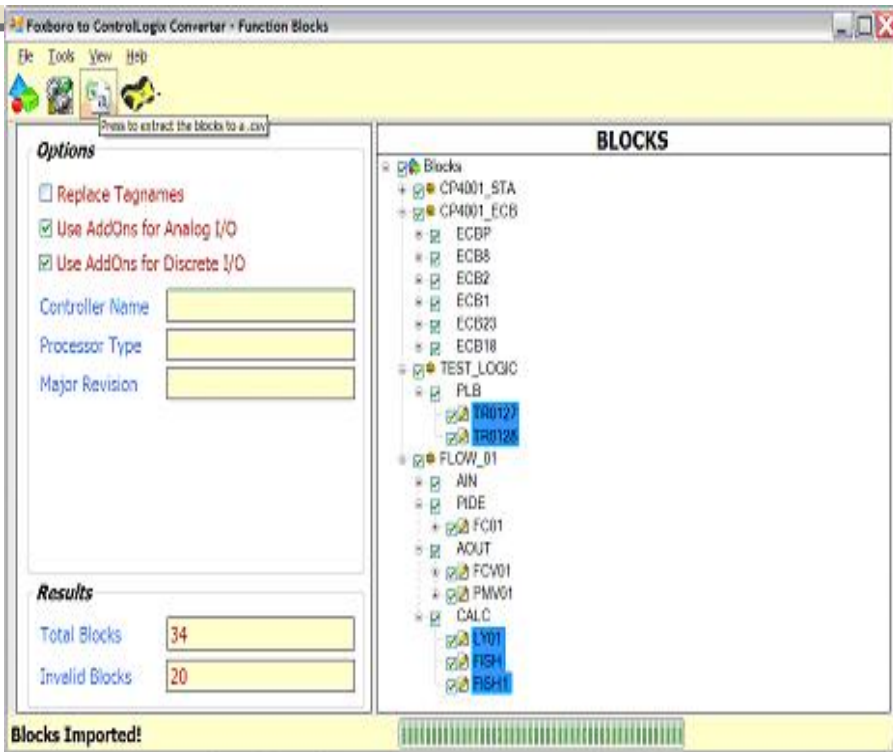
Foxboro IA Object Manager to CLX Interface



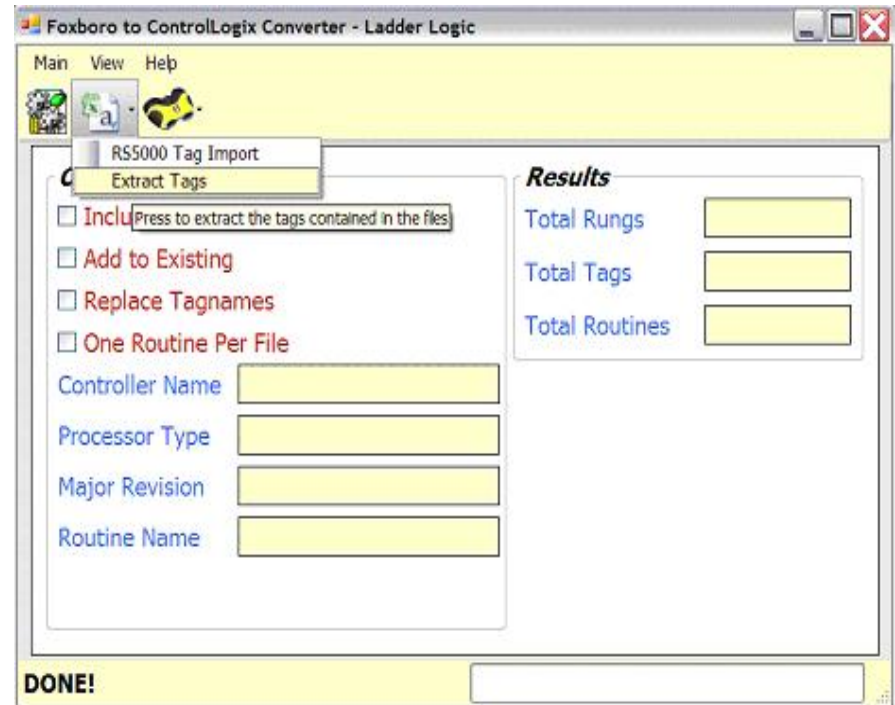
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- Deploys commercially available OPC technology
- SAM is supported by Rockwell Tech Support
- On Line Development is an Encompass partner

Foxboro IA Database Conversion Tool



Foxboro FB Conversion Option



Foxboro Ladder Conversion Option