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Automation Upgrades

Upgrading Your Legacy Control System
What do you need to Upgrade?

Control Systems: PLC, DCS, PC based systems

Operating interface: HMI and PC based operator interface

Field Devices: Motor Starters and instruments
Control Systems are no longer supported by their vendors

PLC systems have a limited lifetime. 10-15 years for most. Old components are no longer available or manufactured.

New more powerful micro-electronics technology has allowed PLC vendors to produce more powerful PLC controllers.

SLC 500 Controllers

Our Bulletin 1747 SLC™ 500 control platform is used for a wide variety of applications. Rockwell Automation has announced that some SLC 500 Bulletin numbers are discontinued and no longer available for sale. Customers are encouraged to migrate to our newer CompactLogix™ 5370 or 5380 control platforms.
Unable to Buy OEM Replacement Parts

Shopping on 3rd party sites (Ebay) for parts

When you can no longer purchase from the vendor a replacement part, you will have to maintain a complete inventory of spare parts for the control system.
Operating systems are no longer supported

Programming and HMI software is no longer supported on the current operating systems.

An example is Windows XP verses Windows 7, 8...10.

Band-Aids like VM wear on new operating systems can be used to extend the life of the programming software.
Skills on Legacy Systems are fading?

Local support as well as regional support of legacy systems is getting harder to find.

Support personal who were in their 30s and 40s back in the 90s are retiring. Knowledge is being lost on these old systems.
Benefits to upgrading your system

Improved features. i.e. communication protocols, better security
Fewer faults and reduced MTBF
Improving network/device communications/security
Standardize controls hardware/software in facility
Solve problems avoid constant Band Aids
Many options for local integrators to provide support
PLC Upgrades Examples

AB PLC5 to ControlLogix
AB SLC to CompactLogix
GE 90-30 to RX3i
Modicon 984s to Quantum
PLC Upgrade

Upgrade Program Tools

Some Manufacturers have upgrade tools which can be used for migrating the application to the new software/platform.

Simulation software for testing.

If using new programming software with old equipment, the firmware in the control system might need to be upgraded.

Scheduled Downtime and Cutting over the I/O

Sometimes the I/O Modules or Terminals on I/O modules can plug into new hardware and only the Rack, PLC Card and Communication Cards need to be changed.

Re-using existing IO termination and only replacing IO cards and processors.
Operator Interface Upgrades

Upgrade HMI Application

Later or similar Platform, much can be imported

If different Platform – Rebuild to duplicate graphics

Loading New Licensing Software in Servers

Loading software on new Tag I/O Server, i.e. Linx Enterprise

Upgrade operating systems to the newest versions

Upgrade anti-virus software on all new operating systems

Upgrade historian software
Operator Interface Upgrades

Migrate the rest of the clients to the new format and point at the new I/O Server and Application Server.

Upgrade historians, large storage mediums (cloud, solid-state hard-drives).

Take advantage of web-based graphics, this allows operation/management to view the process remotely. Please NO control over the web.

When re-creating operation graphics, include the “squeaky wheel” operator.
Network/ Connectivity Upgrades

May choose to upgrade network components between HMI and PLC hardware or between HMI and historian software

Some Device Upgrades may need to have communications to them updated

- Motor Drives – New Models communicate with Ethernet verses Devicenet
- Replace old analog wiring with digital communication

The benefits

- Increased Information, diagnostics and security
- Communications data rate increases – Ethernet IP/ Profinet
Employee of the month

Gigantic Brewing Company
Employee of the Month
February 2016

The new Level Sensor for the Bottling Line
Device Upgrade Communication

Field equipment can now communicate over existing wires using Ethernet I/P, Fieldbus, Profinet...

Examples

You have a legacy flowmeter with a -5V to 5V reading and it failed. Now you need a new flowmeter with additional information available through Ethernet I/P that you want to take advantage of.

You’ve got a 1336 Devicenet Drive and you’ve upgraded to a Powerflex 753 with ethernet I/P comms

DH+, DHRIO, or Devicenet to Ethernet I/P
Bottom Line

Upgrade your Legacy Systems now so that you don’t sacrifice production and continue to pay for the high cost of keeping these antiquated systems afloat

A well planned and well executed upgrade is much less expensive than an unplanned upgrade due to failed equipment.

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<th>SCADA</th>
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<td>CompactLogix and ControlLogix, as well</td>
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