Press Release

The Challenge

Most owners are plagued with multiple systems in their facility that are proprietary and not connected. This represents a challenge to maintenance and operations because they do not have visibility to all the data for predictive maintenance and advanced control. Traditionally this information is gathered manually or a small number of sensors are added to capture critical alarms.

To rectify this situation, owners are now are faced with the costly challenge of how to migrate these systems into their DCS. These systems were installed because at the time there were a multitude of reasons, they could not use their existing DCS. These reasons range from the DCS not being fast enough, the vendor supplied a custom application only on a PLC or proprietary system, the application required a custom I/O card to tie into their instruments, and the capital project accepted the third-party system and did not have the budget to integrate it with their DCS. Some owners have accepted a lower cost system planning to migrate at a later time, others have not standardized on a plant wide system.

Migration costs can be extremely high. A cost benefit analysis identifies if it is feasible to migrate to a completely new system with more capability, add to the existing DCS, but upgrade the antiquated component, and integrate PLC's and third-party systems. Adding to this challenge, most cutovers require wiring changes as the owners do not have a standard design with a mix of marshalling and direct wire. Many owners have moved to a remote I/O and more distributed architecture with controllers in the field to mitigate this wiring cost.

In addition, migrations require outages to cut over these systems. Planning an upgrade around an existing turnaround schedule for an entire facility can take 12 to 15 years or more. Compare this with the life of these systems at 15 years and the migration becomes an ongoing activity for the facility. The migrations come with additional challenge of how to incorporate the existing third-party systems, PLC's and obsolete controllers. This adds additional risk especially when there is poor to no documentation on some of these applications.

Finally, most distributed control systems do not have the speed to compete with PLC's. Contrary the PLC's typically do not have the analog capability of a DCS for PID control. A third area to mention is the requirement for Safety Instrumented System with the high criteria to be available for safely shutting down the process.

The Solution

To solve the above challenges their needs to be a DCS that is low cost, able to compete on the level of a PLC with 1 msec scan times, handle thousands of PID loops, perform complex logic but also be scalable to handle 80K or more I/O. In addition to all of this it needs to have the ability to have a DCS and SIS in the same controller. This solution is referred to as a mini DCS.

Having this mini DCS would also enable migrations to take place one area/asset at a time without migrating the entire DCS. Over time antiquated PLC's, Third Party Controllers, SIS and DCS I/O could be

replaced by a Mini DCS one unit or asset at a time eventually being connected together as the plant DCS. This gives capital projects the flexibility to utilize a mini DCS rather than PLC for applications and keep to the PLC budget, but have the future expandability.

Large DCS vendors have been selling Remote I/O and a more distributed architecture with controllers in the field to lower installation costs – using fiber rather than running homerun cables. The low cost of a mini DCS would facilitate this same capability with the benefit of the cost of a PLC rather than DCS remote I/O or remote controllers.

Migrate all PLC's that are reaching end of life to the mini DCS. This allows a one for one replacement in the field with the ability to connect the mini DCS at a later time. This approach would save on cost for the facility to connect the mini DCS when fiber optic can be added to make the connections.

Having a system that has the programming ability to implement complex applications and the speed to handle fast control requirements would allow the mini DCS to be used to migrate all Third-Party controllers. Many of these controllers are obsolete and require a migration.

Safety Instrumented Systems could be incorporated in the same platform as the DCS. This provides the added value of installing a mini DCS in an area to handle both the DCS and SIS I/O. Many SIS applications have a small amount of I/O compared to the DCS. Integrating the DCS and SIS in the same platform provides additional value.

Additional Advantages

CERTIFICATIONS:

- TUV- SIL 3 IEC61508-2010 and IEC61131-6
- EDSA- 300 Level 2
  - RTP applications software protected against intrusions
  - RTP Node processor protected against flood attempts on host network
  - Encryption option on the host network provides another layer of security, which prevents unauthorized access to RTP system
- ABS Certification
  - Marine and offshore applications such as load distribution pumping, ventilation, centrifuges, and waste water treatment

REDUNDANCY:

- To the level of availability and system cost desired by customer,
- True redundancy not hot standby
- Allows online expansion of Node Processors, IO and number of chassis without system shutdown

NEVER STOPS: (Advanced Diagnostics)

- MTTFS ≅ Mean time for a spurious shut down is >60,000 years
- MTTF ≅50,000 years versus less than 100 years for other systems
- Unlimited online changes to the logic and hardware without interruption of the process

RTP NetSuite:

- One time site registration fee; no need to purchase software again if already a registered user
- No hardware or software keys
- Unlimited number of users/workstations, system tags
- Includes PC based simulator
- Includes configuration program (NetArrays) using object-oriented programming
  - Additional programming options include Ladder Logic, Fuzzy Logic, and user defined logic using Structured Text or C/C++
- Includes Project Tag Database Manager
  - Able to configure redundantly on one computer or across two computers on the network
  - Functions as server to other applications included with the NetSuite software such as RTPView, RTPADA, RTPOPC, and RTPTrend
- Includes HMI application (RTPView)
  - Camera and touch screen support
  - Multiple monitor support
  - Display alarm conditions and system status messages from RTPADA
  - Integrated Scripting language
  - 32 levels of security
- Includes alarm and archiving software (RTPADA)
  - 100,000 tags/second archive rate
  - Trend archived and live data
  - Capability to alarm and archive tags from 3rd party devices

SYSTEM:

- Communication options include Modbus TCP/IP & serial, OPC, Hart
- System allows user to configure "Dual Homed" independent networks across different domains

SUPERIOR PERFORMANCE:

- 1Msec I/O scan, 1Gb host communications
- 1Msec SOE for digital and analog points
- 1Msec Alarm time stamping

10-YEAR WARRANTY:

About RTP

Founded in 1968, RTP Corp. is a developer and manufacturer of high-performance industrial safety and critical control systems. Markets for RTP Corp's products include process control and safety systems, nuclear power plant data acquisition, control, and simulation.

RTP offers an integrated suite of software applications as well as a wide range of rugged hardware and that include dual, triple and quadruple redundant systems for mission critical applications.

For more information, visit www.rtpcorp.com