Standardized ControlLogix / ArchestrA framework

Panacea Technologies Inc. has released a standardized Rockwell Automation ControlLogix and Wonderware ArchestrA 2012 framework for the process automation industry. The framework combines the "ease of configuration" of a DCS with the flexibility of an inexpensive PLC/SCADA architecture. Panacea's framework allows automation engineers to concentrate on automating their process rather than developing generic control module software for the controller and HMI systems.

Panacea's ControlLogix / ArchestrA framework includes:

- A function rich ControlLogix add-on instructions function block library.
- ArchestrA Template Toolbox to match the ControlLogix library.
- ArchestrA Graphic Toolbox for faceplates and graphic symbols for the ControlLogix library.
- Standard Banner layout and navigation standards.
- Windows for alarm summary, alarm history, event history, trends, InBatch, and system diagnostics.
- Automatic history utilizing Wonderware InSQL.
- Integration with Wonderware InBatch.
- All scripting required for a Windows Domain based security scheme. The security is configurable per user, group, area, and operator station.
- Controller and ArchestrA architecture and configuration guides.

Rockwell Automation ControlLogix Add-on Instructions

Panacea Technologies Inc.'s ControlLogix add-on instruction library reduces the amount of programming required in the controller, reducing system development time and cost and increasing quality by reducing programming errors.

Some of the main add-on instructions are:

- Analog and digital indicators.
- Weight indicator with tare functionality.
- Device controller with interlock functionality for any two state device such as valves and motors.
- Encapsulated Rockwell PID controller with ramp and interlock functionality.
- Setpoint/Manual loader with ramp and interlock functionality.
- Gap/Deadband controllers.
- Variable Frequency Drive control module which integrates the analog control for the drive and the discrete control for the motor into a single add-on instruction.
- Wonderware InBatch phase logic interface.
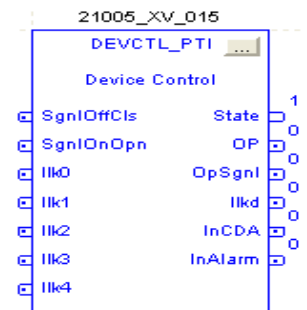
Device Control add-on instruction

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All ControlLogix add-on instructions have the following features:
- Input/Output scaling or inverting capability.
- Built in I/O simulation capability.
- Interlock override capability.
- Instructions that handle analog signals have standard HH, H, L, LL, ORA (Out of Range) and DEV (deviation alarms).
- Instructions that handle devices with discrete feedback have CDA (Command Disagree alarms).
- Alarms have configurable hysteresis and On/Off delays.
- Instructions have modes built into them that restrict operator interaction when the associated devices or loops are being used by a phase
- Integrated Rockwell Logix5000 instruction help.

Controller Software Architecture Guidelines

Panacea Technologies Inc. has developed standards for programming the ControlLogix controllers. Some of the features are:
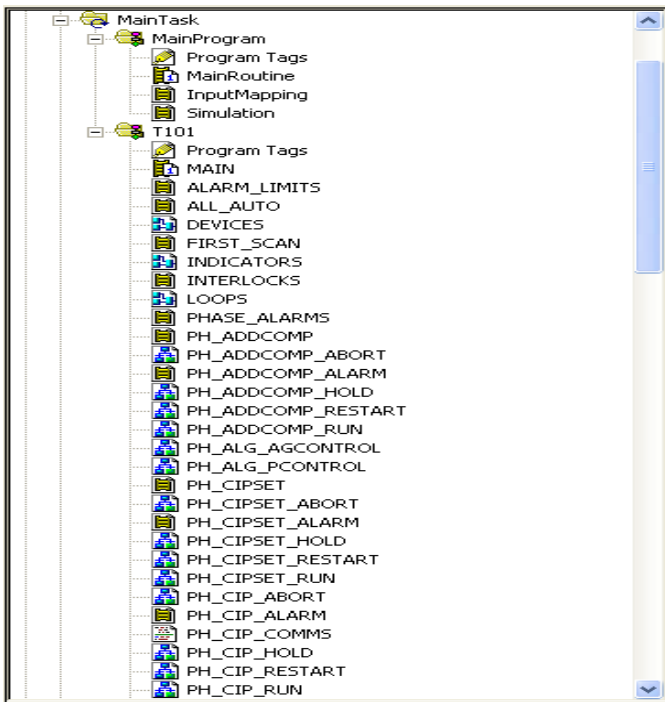

ControlLogix Software Architecture

- Easy integration with any I/O bus such as DeviceNet, ControlNet etc. is possible because control modules interface with local variables. Input/Output mapping to actual I/O is performed in separate ladder sheets.
- Controller software is designed to enable bypass of the entire I/O subsystem used by the controller. This allows the debug of test code on a test system not connected to any I/O.
- All logic associated with Indicators, Devices. Loops, Phases and Interlocks are in standard locations and can be easily identified.
- Every device and loop is on a separate sheet allowing easy additions and deletions of the device or loop.
- Phases with the same functionality can be copied without modifications from one unit to another unit. Thus eliminating programming, debugging and testing time.
- Cloning of units is greatly simplified.
- Variable naming has been designed to allow optimized communications.
- On larger projects it is possible to create all control modules, interlocks and phase shells using Excel sheets greatly reducing configurations costs and improving quality.

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Wonderware ArchestrA Template and Graphic Toolbox

Panacea Technologies Inc.'s ArchestrA Templates and Graphic Toolboxes integrated with the ControlLogix add-on instructions provide user interface, alarming, event logging, history, and security. All templates and Graphic Toolbox objects are developed using the latest ArchestrA System Platform 2012 development environment. The graphic toolbox objects can be used for either the new ArchestrA graphics or the standard InTouch graphics.

All Panacea's ArchestrA Template and Graphic Toolbox have the following features:


A PID Operational Faceplate

- They contain faceplates and graphic symbols for all ControlLogix add-on instructions.
- ArchestrA Templates are designed to minimize communication to the PLC controllers.
- All tagging from the ArchestrA layer can be done with a single tag reference.
- When placing a graphic symbol on a window the engineer only needs to tie it to a single tag.
- Graphic symbols open up the object's operational faceplate.
- Correctly naming objects in the ArchestrA model automatically establishes the link to the controller. No other naming or addressing is required.
- Graphic symbols display the process values, data quality, alarm states, interlock states, modes, and the simulation status.
- Use the latest animation scripts and features provided by ArchestrA System Platform 2012.
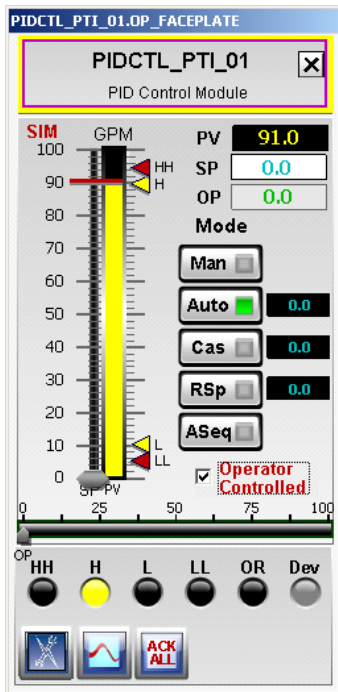
ControlLogix instructions have associated operational, detailed and trend faceplates:

- These faceplates have built in security modes to restrict user access based on user type.
- Faceplates are designed to be 21CFR11 compliant. All operator interactions are logged.
- Faceplates have been designed to allow operation from touch screens.
- Faceplates depict and allow control of a large number of attributes of the instruction and are similar to DCS faceplates.
- I/O simulation can be performed right from the detailed faceplate.
- Raw I//O data is visible on the detailed faceplate
- Interlocks can be enabled/disabled from the detailed faceplate.
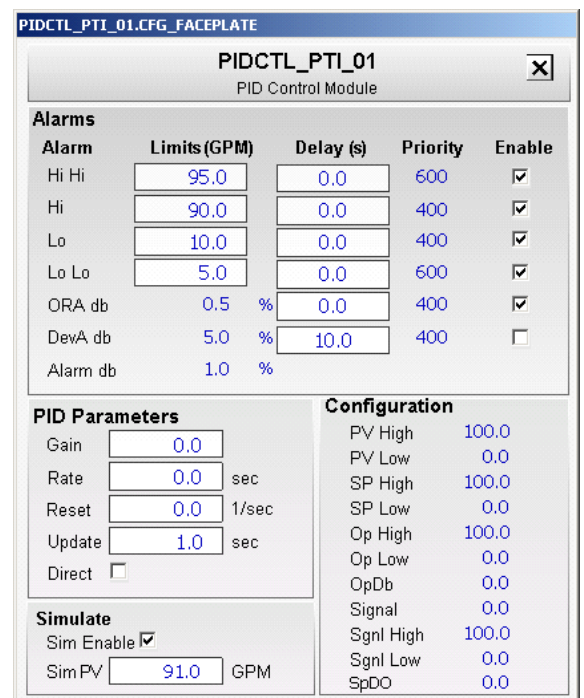
A PID Detailed Faceplate

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- Pre-configured standard historical trend displays can be called up from the faceplate.
- Alarm acknowledgment can be performed from the faceplate.

ArchestrA Framework

Panacea Technologies Inc. developed a framework including screens, scripts and ArchestrA templates for modeling process areas, controllers, units, and other miscellaneous objects using the latest ArchestrA System Platform 2012 development environment.
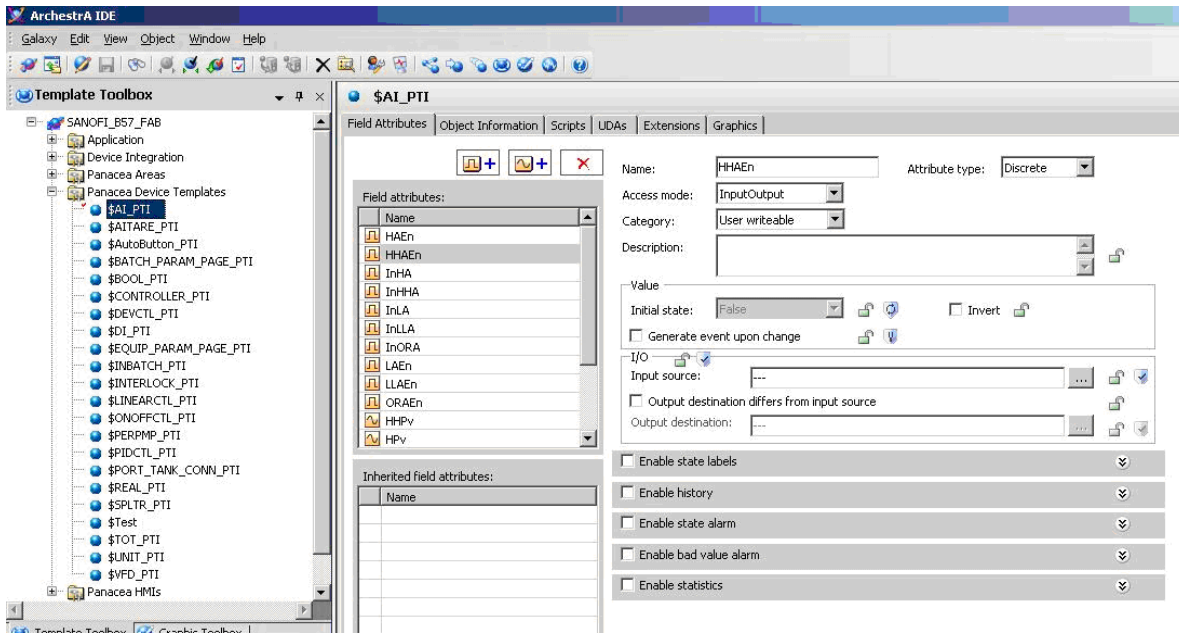
ArchestrA Framework With Preconfigured Templates

- Windows group based security is integrated with all elements of the system.
- The framework is designed to support designing a single InTouch application that transforms itself based on the HMI on which it is executed.
- 21CFR11 functionality is standard.
- InBatch interface screens are standard.
- In order to support large Batch projects, batch call up buttons on unit screens are optimized to take you to the recipe that has allocated the unit.
- Pre-configured banner buttons allow access to standardized functionality.
- Base system architecture and status screens can be modified for every project.
- The framework includes a Tag Selector control to browse the tags within a selected galaxy and launch the operation faceplate for a selected tag.
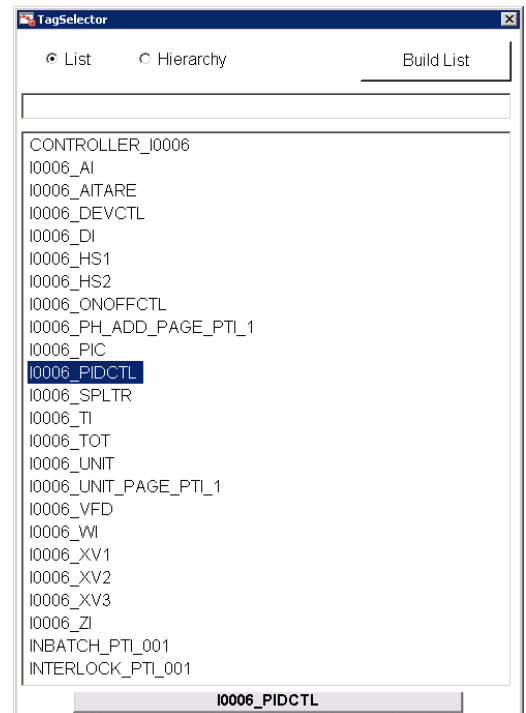
Documentation

Panacea Technologies Inc.'s maintains documentation under change control on all ControlLogix and ArchestrA code.
This documentation includes:

- Software design and testing documents for all Control Modules. A Control Module includes the Add-on instruction and all associated ArchestrA templates and graphic elements.
- Clients can either re-execute the tests or use a copy of Panacea's executed testing document for their validation records.
- Design and Testing document for the ArchestrA Framework including domain security integration testing.
- Controller software design architecture document.

**Contact Panacea Technologies Inc. at (267) 421-5300 x105 or at
sales@panaceatech.com to request an onsite demo or signup to receive a invitation for the next web demo.**