# CTI's Workbench Basic Training

# An Introduction to Programming Automation Systems

## Prerequisite knowledge

The student must have an understanding of modern control principles and experience used or worked with these systems. The student must be acquainted with Windows<sup>®</sup> based PC environment and applications.

- Industrial Control Devices wiring and application, such as valves, sensors, motors, etc.
- Basic Industrial Communications Systems such as Serial Communications and Ethernet networks
- A Basic understanding of Programming Practices
- An understanding of digital and analog circuits

#### Goals

This course will provide the student an introduction to CTI's IEC 6-1131-3 program development and PAC control system. The student will learn the concepts that are the foundation of using today's IEC 6-1131-3 Programmable Automation Controllers. These concepts are reinforced with hands on labs and real world application examples using the various languages supported in IEC6-1131-3. This course will give the student:

- Knowledge of IEC 6-1131-3 terms
- Understand PAC Scan Cycles...
- Programming language differences
- Data variable types
- IEC 6-1131-3 System architecture
- Using Workbench and the procedure for creating an application from start to finish
- Provide an understanding of CTI's System Hardware Components and their relationships

### Method

- Various demonstrations
- Exercises

# Number of participants

• Maximum 6

#### Duration

• Basic training : 3 days

Courses are generally taught Monday through Wednesday at NAPA's offices. Our courses are also offered for customer on-site classes.



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#### Contents

- 1. How to Install the software and understanding the licensing procedure
- 2. Intro to IEC 6-1131-3 concepts, terminology, data types
- 3. The correlation between IEC 6-1131-3 and CTI's Workbench
- 4. Introduction to CTI's Workbench Startup and how to navigate
- 5. Creating variables and data types
- 6. How to get started designing an application
- 7. Control Application Development using different languages
- 8. Downloading and commissioning a project
- 9. How to use Ethernet Interfaces for Program Developing, Editing and Startup
- 10. Introduction to industrial communication applications
- 11. Safety Practices as it applies to on-line and off-line editing or program download and startup