

IED Integration and Automation Training

Course: Using the SMP Gateway Soft PLC Training
P-TTRN-0102-00

Duration: 2 days

Overview:

Participants are introduced to the SMP Gateway's built-in automation functions and to the capabilities available using the Soft PLC. During this process, participants learn to design, implement, document, debug, validate and maintain automation algorithms that can be executed as custom SMP Gateway applications. Detailed hands-on examples, centered on relevant application problems, ensure that the participants become fully familiar with all aspects of the SMP Gateway's automation capabilities.

Recommended Audience:

The course is intended for engineers and technicians involved in the process of specifying, selecting, installing, configuring, maintaining or operating substation automation and control systems.

Prerequisites:

Using the SMP Gateway Training is a prerequisite for this class.

Objectives:

At the end of the course, participants will be able to:

- Understand the type of automations applications that can be developed for the SMP Gateway and select the appropriate solutions
- Use the built-in automation functions
- Use the built-in Logic Processor
- Use the CoDeSys workbench to design and implement Soft PLC applications for the SMP Gateway, in any of the six IEC 61131-3 languages

Note that even though the course introduces all six IEC-61131 programming languages, its primary focus is on the use of these languages to design Soft PLC applications for the SMP Gateway, rather than on the languages themselves.

Contents:

- Introduction to the SMP Gateway automation capabilities
- Using SMP Config to configure the built-in automation functions
- Using SMP Config to configure the built-in Logic Processor
- Overview of the Soft PLC architecture and components
- Introduction to standard IEC 61131-3
- Syntax and semantics of the six IEC programming languages:
 - IL – Instruction List
 - ST – Structured Text
 - LD – Ladder Diagram
 - FBD – Function Block Diagram
 - SFC – Sequential Function Chart
 - CFC – Continuous Function Chart
- Data types:
 - Standard data types
 - User-defined data types
 - Overview of CoDeSys operators
 - Interfacing with the SMP Gateway
 - Overview of the IEC standard library
 - Predefined POU's (internal / external libraries)
- The CoDeSys workbench
 - Task configuration
 - Trace configuration
 - Viewing functions
 - Debugging functions

Conditions:

- Courses run from 8:30 AM to 4:30 PM, for two consecutive days.
- Courses can be held at Cooper Power Systems' Montreal City offices or at client facilities.
- Each participant will receive printed notes and a CD with current software and documentation.
- Courses can be tuned to the special requirements of a group. Greater emphasis can be placed on functions, protocols and devices that are relevant to the group's particular applications.
- Availability of specific field devices to be used for hands-on exercises must be arranged for ahead of time.
- For courses given at its offices, Cooper Power Systems provides the SMP Gateways and computers for the hands-on exercises.

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