

Course Description

SIMATIC® S7

AB™ to S7 Fast Track

Course Code: S7ABFP1A



Length: 3 days - April 19-21, 2011

Location: Dittman & Greer, 125 Coe Avenue, Middletown, CT 06457

Target Audience

This course is for experienced **Allen Bradley** programmers who are migrating systems to **Siemens SIMATIC S7 PLC** family and STEP7 engineering software. The course compares Allen-Bradley hardware and software (Allen Bradley PLC5 and SLC products with reference to RS Logix) to the Siemens STEP7 platform. Therefore, a good knowledge of AB's PLC5 and SLC5 hardware along with RSLogix is desired. Since the course concentrates on STEP7 software, a strong PLC programming background would also qualify.

Profile

This course is a "**Fast-Track**" agenda that acknowledges the automation experience of the students and delivers must-know information for systems migration to SIMATIC STEP7. This course moves engineers or high-level maintenance staff quickly into the power of STEP7. A variety of real world solutions and key AB functionality is compared, contrasted and demonstrated in this course. Multiple S7 program editors are presented demonstrating the flexibility and fully integrated features of STEP7.

This course concentrates on STEP7 software, program structures, System Functions, advanced block libraries and custom block design. STEP7 engineering tools and programming instructions are demonstrated to guide the student through the development of a realistic application. Analog processing and alarming are detailed through theory and program examples.

The course format consists of instruction and hands-on exercises. Students will use test, debug and diagnostic tools to complete the programming exercises.

Objectives

Upon completion of this course, the student shall be able to:

- Use the engineering tools of STEP7.
- Program using the multiple address types.
- Use symbolic addressing.
- Test and troubleshoot an application program.
- Create custom code blocks.
- Demonstrate reusable program blocks.
- Use the data access functions.
- Demonstrate how to process analog values.
- Demonstrate and monitor data blocks.

Topics

1. SIMATIC S7 verses AB Overview

- Program structures
- Software navigation and tools
- Help files

2. Memory Allocations and Symbolic Addressing

- Fixed, global and floating memory
- Data Types
- Data Blocks
- Memory and addressing comparisons

3. Hardware Assignments

- Racks and rail options
- CPU selection
- Analog options and considerations
- Remote I/O and PROFIBUS

4. Structured Programming

- File Handling verses Blocks
- File Calls verses Functions
- Parameter Passing
- Cross Reference Tool
- Reusable FCs and FBs

5. Program Editors / Instruction Set

- AB verses Siemens Ladder Logic
- Conversions to Function Block Diagram and Statement List
- Engineering Tool software options

6. Timers and Counters

- Key differences in structure
- The power of System Functions (SFCs)
- Clock Cycle

7. Analog Handling

- FC 105 and 106
- Scaling, limits and offsets
- Analog output signal conversion
- Processing and alarming with the analog values
- Scaling analog to engineering values

8. Debug, Test and Documentation

- Status charts verses Variable Tables
- Monitor and modify tools
- File management and archiving