Course description
INT315C
System 800xA with AC800M Engineering Part 1 – Control Builder

Course goal
The goal of this course is to learn the engineering of a complete control project using the Extended Automation System 800xA with AC 800M controllers and Control Builder as the engineering tool. Note that this course is split in two parts and the follow-up course is T315H for the Human System Interface (HSI) configuration.

Learning objectives
Upon completion of this course the participants will be able to:

- Explain the System 800xA architecture and the function of the different components
- Navigate in the system and create new objects / aspects
- Create a new control project and plan the structure of application programs based on a P&ID and a Functional Specification
- Configure the AC 800M hardware and corresponding I/O’s
- Handle the standard libraries provided by ABB and develop project specific libraries
- Design and configure application programs by using a variety of IEC 61131-3 languages
- Define tasks and describe the assignment rules
- Analyze the controller diagnostics and optimize the CPU load / memory usage
- Configure user defined object types
- Setup communication using various protocols
- Setup the OPC connectivity to AC800M

Participant profile
This training is targeted to system and application engineers, commissioning and maintenance personnel, service engineers and system integrators.

Prerequisites
Students shall know the fundamentals of working with Control Systems and have basic knowledge of Windows XP and networking technologies.

Topics
- System 800xA architecture
- Engineering Workplace / Plant Explorer
- Project and application structures
- AC 800M hardware
- Project backup
- Libraries
- Variables and data types
- Function Block Diagram
- Structured Text
- Task assignment and memory
- Control Modules
- User defined object types
- Sequential Function Charts (SFC)
- Communication
- OPC connectivity

Course type and methods
This is an instructor led course with interactive classroom discussions and associated lab exercises. Approximately 50% of the course is hands-on lab activities. The language of the course is English.

Duration
The duration of the course is Five days.
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## Course outline

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Engineering workplace / plant explorer  
Project and application structures  
AC 800M hardware | AC 800M hardware  
Project backup  
Libraries  
Variables and data types  
Function block diagram | Structured text  
Task assignment and memory  
Control modules | User defined object types  
Sequential function charts (SFC) | Communication  
OPC connectivity |

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