Course description

F851
Automation Products AC500
Advanced Programming

Course Duration
The duration is 3 days.

Course Type
This is an instructor led course. Approximately 50% of the time is used for hands-on labs and practical exercises.

Course Goal and Learning Objectives
The goal of this course is to learn the engineering of the AC500. Upon completion of this course the participants will expand their programming skills and learn how to efficiently program and test AC500 and how to connect it to different control and monitoring devices.

Student Profile
This training is targeted at application engineers, programmers and system integrators.

Prerequisites and Recommendations
Students should have attended the F850 AC500 Basic course or have knowledge and experience associated with the content of this course.

Main Topics of the Training
Project structure and programming
- Definition of HW configuration for “Carwash” project
- Mapping of variables (import from templates)
- Program structure and programming
  - Task configuration
  - Dealing with POUs, actions and several global variable lists
  - Step chain programming, SFC editor
  - Editors: ST and FBD
  - Defined data types: arrays and structures
  - Creation of an own FB
  - Creation of an own library
  - Alarm and Event handling
  - Recipes
  - Project security; user groups and levels
- Creation of new project from the existing one (best practice by adaption)

Integrated Visualization
- Import and creation of visualization objects (dealing with several screens and master screen, switching between screens)
  - Mapping the variables for existing visualization
  - Creation of additional screens
  - Creation of a visualization template

Program test, test functions, trouble shooting
- Watch lists, test functions
- Trends and traces
- Customization of programming environment depending on the programmer and application requirements

Programming of parallel control and monitoring devices
- Control out from different devices:
  - Integrated visualization
  - Web server
  - OPC client (e.g. Matrikon)
  - CP600 via CODESYS TCP/IP protocol (the CP600 project is prepared)
- Data backup and data handling
- Project and source code backup on the SD card
- Data handling by use of CAA library
# Course description

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## Course outline

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<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
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<tr>
<td>- Definition of HW configuration for “Carwash” project</td>
<td>- Programming of control from different places</td>
<td>- Dealing with defined data types</td>
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<tr>
<td>- Mapping of variables (import from templates)</td>
<td>- Creation of additional visualization objects</td>
<td>- Data logging</td>
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<tr>
<td>- Test of the hardware configuration</td>
<td>- Alarm handling with visualization</td>
<td>- Test of control from different places:</td>
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<tr>
<td>- Creating of program structure for “Carwash”</td>
<td>- Creation of own Function Block with integrated visualization template</td>
<td>- Integrated visualization</td>
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<td>- Step chain programming</td>
<td>- Creation of own library</td>
<td>- Web server</td>
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<td>- Adapting of visualization template</td>
<td>- Recipes with visualization</td>
<td>- OPC client (e.g. Matrikon)</td>
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<tr>
<td>- Commissioning of the project</td>
<td>- Sampling traces with visualization</td>
<td>- CP600 via CODESYS TCP/IP protocol (the CP600 project is prepared)</td>
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<tr>
<td>- Program test, test functions and trouble-shooting</td>
<td></td>
<td>- Project security, user groups and levels</td>
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<tr>
<td>- Project backup</td>
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<td>- Data backup and data handling</td>
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Please note that a notebook with Automation Builder is provided by the training facility. If you wish to use your notebook, please install the current version of Automation Builder by yourself prior to the training.

## Course Bookings

http://www100.abb.com/TPOnline/NET/Public%20Courses.aspx

## Contact

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## Further AC500 Information

www.abb.com/PLC