SIEMENS

OPC UA – Basics and Configuration

General Information

Course Code	SCT-DI-OPCUA1
Global Code	IK-OPCSYS
Length	4 Days
CEUs	2.6

Audience

This course is for SIMATIC S7-1500 and S7-1200 PLC users who want to use the OPC UA features and communication capabilities. PLC users with engineering experience in the design and maintenance of SIMATIC automation systems and their application programs. This includes Programmers, Automation Engineers, and Commissioning Engineers.

Prerequisites

- TIA Portal Programming 1 (Face to Face or Virtual)
OR
- AB to S7 with TIA Portal

Profile

This training offers you a detailed introduction into the basic concepts of the OPC UA system and its interfaces. You will learn the terminology behind the abstract model and test your understanding of all OPC UA capable components. You will also learn about the most important OPC UA servers and clients in the SIMATIC product portfolio.. A continuous exercise will lead you gradually to a communication model that is solely based on OPC UA communication.

Objectives

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

- Describe the basic concepts of OPC UA.
- Define the terminology and the data models of OPC UA in the automation environment.
- Interact with the components in the OPCUA automation environment.
- Configure OPCUA servers and clients of the SIMATIC product portfolio.

Topics

1. Introduction to OPC
2. Infrastructure of OPC UA
3. Security of OPC UA
4. Information model, data access types and profiles of OPC UA
5. SIMATIC controllers as OPC UA servers and clients:
   a. Configuring the OPC UA server
   b. Programming OPC UA methods
   c. Programming an OPC UA client
6. OPC UA Companion Specifications and modeling the server interface with SiOME.
7. SIMATIC HMI products as OPC UA servers and clients:
   a. SIMATIC HMI Comfort/Mobile Panel
   b. SIMATIC WinCC Runtime Advanced
   c. SIMATIC WinCC Runtime Professional
8. SIMATIC NET OPC Server
9. SIMATIC Ident RF600 Reader as OPC UA server
10. Integration of 3rd Party OPC UA servers using a 2D code reader
11. Standard OPC UA clients (UaExpert, OPC Scout)
12. Performance of OPC UA connections
13. Diagnostics and debugging of OPC UA components.
14. Migration from OPC Classic to OPC UA.