Course Overview

Course number: MOPC-0008-WS
Course length: 2 days

With the advent of the Industrial Internet of Things (IIoT), modern process control and automation systems require connectivity software that is capable of utilizing new technologies to manage the connections between data sources and the applications used to analyze, visualize, and historicize data. By defining all functionality in abstract terms, OPC UA enables applications to take advantage of any current, or yet-to-be-developed technology. This workshop introduces participants to the potential of this new specification and the applications that will be developed from it.

During this workshop, participants will;
- Discuss the OPC UA Specification and its design goals, objectives, and structure
- Study how OPC UA works behind the scenes
- Understand the OPC UA Security model and OPC UA Information Modeling
- Examine the current implementation technologies
- Discuss migration strategies from classic OPC to OPC UA
- Understand the benefits of OPC UA and how OPC components can be used to build efficient and flexible systems

Course Benefits

Participants in this workshop gain real-world understanding of the potential of this specification and the applications that will be developed from it. Practical exercises will focus on specific functionalities and will demonstrate how OPC UA applications will seamlessly integrate with existing systems, providing continuing support of legacy capabilities and “future-proof” adaptation to new technologies.

Completion of MOPC-0007-WS, MOPC-0008-WS, and MOPC-0009-WS will grant the student MatrikonOPC Systems Integrator certification. To learn more about MatrikonOPC Systems Integrator certification and how the completion of this course can be used for Educational and Professional Credits visit: http://matrikonopc.com/training/workshops/opc-workshops-opcsi-certification.aspx

Course Delivery Options

- In-Center Instructor-Led Training
- On-Site Instructor-Led Training
- Virtual Instructor-Led Training
- Hybrid Instructor-Led Training

Who Should Take This Course?

This workshop is particularly useful to Control and Application Engineers, Developers, Integrators, Managers, Operations Managers, Plant Floor Operators, Plant Managers, Product Managers, Technologists, Technicians and managers responsible for the commissioning and day-to-day operation of automation and process control systems. It also contains information relevant to managers and administrators responsible for the design of process control architectures, selection of technologies and software and the purchase of both hardware and software for these systems. To anyone who is expanding current operations, replacing legacy equipment and looking for ways to improve data communication, our OPC UA hands-on workshops provide a practical approach to learn and understand the methods of accessing data using OPC UA Technology.

Prerequisite/Skill Requirements

Prerequisite Course(s)
- None

Required Skills and/or Experience
- Microsoft Windows and basic computer use
- An understanding of automation requirements

Desirable Skills and/or Experience
- No previous OPC experience is required

Course Topics

Introduction to OPC UA: The course begins with an introduction to OPC and explains the fundamental concepts including the vision of OPC and the motivation for the development of the Unified Architecture. Through examples and case studies, participants will understand how OPC UA compares to classic or proprietary connectivity methods.

How OPC UA works: OPC UA is designed to be independent of the platform. Using SOAP/XML over HTTP, OPC UA can be deployed on Linux, Windows XP Embedded, VxWorks, Mac,
Course Topics continued

Windows 7 and Classical Windows platforms. This module focuses on how OPC UA leverages web services for data communications.

**OPC UA through firewalls and across the internet:** OPC UA uses message based security. Therefore, messages can be relayed through HTTP, UA TCP port or any other single port available. This means the exchange of process data across different domains, WANS and through firewall is no longer a hassle. The factors that impact these environments will be explained and participants will be shown how OPC UA is used to resolve these issues.

**OPC UA Information Modeling:** The concept of an abstract information model, various views based on different criteria and the implementation details of how to store and organize the ‘cloud’ of objects and their relationships is a difficult thing to explain on paper. This module focuses on the OPC UA address space and browsing interface and how it can be utilized in today’s OPC implementations.

**OPC UA Security Model:** OPC UA is secure-by-default, encryption enabled and uses advanced certificate handling. In this module the instructor will cover the security considerations, the OPC UA Security Model, and the certificates and PKI for OPC UA Architectures.

**Performance and infrastructure considerations:** OPC UA must be able to scale from smaller systems using operating systems such as Windows Embedded to larger scale enterprise level systems supporting multiple operating systems and web-enabled connectivity schemes. Performance in these types of systems will be discussed in terms of the transport and security protocols used as well as the encoding techniques. In addition, other factors affecting the performance of process control and automation systems will be discussed.

**OPC UA applications and migration strategies from Classic OPC to OPC UA:** When migrating your existing Classic OPC architecture to OPC UA, careful planning and considerations must be addressed beforehand. This module explains various OPC UA applications and advanced tips and tricks for participants to consider when migrating from Classic OPC to OPC UA.

Workshop Schedule

http://matrikonopc.com/training/workshops/course-schedule.aspx

Additional Training

To increase your knowledge and skills, there are additional courses available from Automation College.

For more information and registration, visit www.honeywellprocess.com/en-US/training.