SIEMENS

Industrial Networks Education Data Communication with Industrial Ethernet

General Information

Course Code: IEN-WT-IEOSI Length: 1 Hour

Audience

This course is for anyone interested in learning about the topic of Industrial Ethernet, either as an introduction or as a refresher, regardless of the industry, as the content is about the technology. Participants range from Sales Engineers wanting to get a better understanding of the topic to Plant Engineers or Substation Engineers wanting to freshen up before taking one of our certification courses. Other ideal candidates could include, but is not limited to the following:

- Application Engineers
- Automation Engineers
- Commission Engineers
- Communication Engineers
- Control Engineers
- Facility Managers
- Operations or IT Network Engineers
- Plant Engineers
- Project Engineers
- Sales Engineers
- Substation Engineers
- System Engineers

Prerequisites

None

Note: WBT requires a PC with the following minimum configuration:

- o Microsoft Windows XP / 7 or higher
- o Microsoft Internet Explorer 10.x
- o flash player version 10 or higher
- o Internet connection
- o Software warranty class A

Profile

The web-based training is designed to get familiar with the topic of Industrial Ethernet.

The training consists of five content-relevant chapters and one non-mandatory final test. It describes the functional principle of data communication with Industrial Ethernet in relation with the ISO/OSI data communication model using a parcel shipment analogy.

Objectives

This web-based training is part of the "Siemens Initial Training for Industrial Networks" and gives an introduction to the topic of Industrial Ethernet.

After completing the tutorial program, participants will understand the meaning of Industrial Ethernet as well as its principle and function in connection with the ISO/OSI data communication model.

Topics

- 1. Introduction to Industrial Ethernet
 - a. The Ethernet standard
 - b. What is Industrial Ethernet?
 - c. Ethernet in the automation levels
 - d. ISO/OSI data communication model
- 2. Application-oriented layers
 - a. Application-oriented layers, based on the example of parcel shipment
 - b. Assignment of services through ports
 - c. Application-oriented layers in the ISO/OSI model
- 3. Addressing and transport of data packets
 - a. Layer 4: Transport layer
 - b. Layer 3: Network layer
 - c. Layer 2: Data link layer
- 4. Transmission media and procedures
 - a. Transmission media
 - b. Cabling systems
 - c. Transmission technologies
 - d. CSMA/CD Access procedures