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Wireless LAN in Industrial Networks

Industrial Networks Education

Description

In industrial environments, WLAN is exposed to more extreme conditions, such as temperature fluctuations, humidity, dust, etc. In addition, a high-degree of reliability and performance is expected from these systems. At the same time, these industrial WLAN networks (IWLAN for short) provide a great deal of flexibility for companies in the implementation of complex applications indoors and outdoors. Thus, with Safety Integrated, applications can also be wirelessly implemented and seamlessly connected to Industrial Ethernet with PROFINET components.

Familiarize yourself with the required fundamentals of such networks in the qualification module "Wireless LAN in Industrial Networks" of the Industrial Networks Education - Certification Program.

General Information

Course Code: IEN-IKWLAN1A
Length: 3 Days

Audience

This course is for users who are involved with developing or sustaining automation networks in an industrial environment. This includes, but is not limited to the following:

- Plant Engineers
- Control Engineers
- System Engineers
- Commission Engineers
- Application Engineers
- Operations or IT Network Engineers
- Facility Managers
- Project Engineers

Prerequisites

- Basic knowledge of the topic "Ethernet".
- Familiar with network topologies, transfer processes, addressing, data transport, and understand the associated technical vocabulary.
- Familiar with the principles of router operations, switches and an OSI reference model.
- Recommended: Completion of the web-based Initial Training for Industrial Networks (ITIN) course.

Profile

This course is one of three certification courses offered under the Siemens Certified Professional for Industrial Networks (CPIN) program. The curriculum covers the basic physics of WLAN, and the various wireless standards and access methods. Throughout the course, students will learn how to plan, configure and operate wireless solutions in industrial applications, in interaction with real-time systems.

Throughout the course, students will have ample time for practical exercises, diagnostics, and troubleshooting. The course uses a hands-on model for realistic demonstrations.

Objectives

Upon completion of this course, the student will learn:

- Comparison and coexistence of different wireless technologies
- Theoretical fundamentals of wireless technology
- Security and high data rates in WLAN
- Introduction to the different WLAN standards
- Planning and configuration of different radio links
- Planning and configuration of RCOAX radio networks with iPCF
- Planning and configuration of free radio networks with iPCF-MC
- Introduction to iREF and Inter AP Blocking
- Comprehensive exercises using the SCALANCE W product line

Topics

1. Introduction to Industrial Wireless (IWLAN)
2. Wireless Theory
3. Antenna technology
4. WLAN access procedures
5. WLAN Standards
6. Radio field planning
7. Typical industry protocols
8. iPCF
9. iPCF-MC

Certification (Siemens CPIN-LEVEL)

After the training course, you have the opportunity to become certified as "Siemens Certified Professional for Industrial Networks - Wireless LAN". The certification examination takes place at the end of this training.

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