Switching and Routing in Industrial Networks with RUGGEDCOM

OEM: Siemens • Code: RC-SWIROR

COURSE DESCRIPTION

This training was conducted until March 03, 2026 under the course number IK-SWIROR. Ethernet has found its way into the industrial environment. A high degree of reliability and throughput rates are demanded from industrial networks. At the same time a reliable integration into a corporate network is highly required. In this course, participants will gain the theoretical and practical knowledge required for real world implementation of Industrial Networks and the methods applied to operate and maintain such networks. You will also gain theoretical and practical knowledge of what IP communications, routing protocols, redundancy, LAN/WAN concepts that helps facilitate communications between multiple network locations. In addition, participants will apply these concepts on RUGGEDCOM devices. The course includes ample time for practical exercises, diagnostics, and troubleshooting.

AUDIENCE PROFILE

- Decision makers
- Planners
- Sales personnel
- Configuring engineers
- Commissioning engineers
- Engineering personnel
- Project engineers
- Maintenance personnel
- Service personnel
- Industry: COOs
- IT: CIOs, network planners and administrators

PREREQUISITES

- Participants shall have basic knowledge of Ethernet and should be familiar with network topologies, Media Access Control (MAC), Internet Protocol, data transport and associated technical vocabulary. It is also helpful if you are familiar with the principles of operation of switches and the OSI reference model. We also recommend attending the "Ethernet Fundamentals in Industrial Networks" training course.
- IK-ETHBAS
- To prepare for the training, please work through the WBT Data communication with Industrial Ethernet.

Note

- Included in the course price: Free access to the digital learning platform SITRAIN access - starting one week before the start of the course until two weeks after the end of the course.

- With the Learning Membership, you can deepen or repeat the content of this Learning Event as well as continue your education on other interesting topics.

COURSE OBJECTIVES

By the end of this course, participants will be able to:

- At the end of the course, participants will be familiar with the special requirements of industrial network solutions and will have the knowledge to plan, implement, and provide support for plain networks in an industrial or industry-related environment.

COURSE OUTLINE

Module 1: Content

Switching

- Layer 2 Technology Overview
- Switching in Industrial Ethernet Networks
- Commissioning with RUGGEDCOM Operating System (ROS)
- Port Configuration
- Redundancy in Switched Networks (Rapid Spanning Tree Protocol)
- Network segmentation with Virtual Local Area Networks (VLAN)
- Increasing bandwidth availability (Link Aggregation)
- Integrating Serial Protocols
- Monitoring (ROS)
- Diagnostics and Troubleshooting (ROS)

Routing

- Layer 3 Technology Overview
- Commissioning with ROX Operating System
- LAN and IP interfaces
- WAN interfaces
- Internet Protocol Services
- Router redundancy (VRRP)
- Static Routing
- Dynamic Routing (OSPF)

- Practical exercises using the RUGGEDCOM products