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*Ingenuity for life*

# Course Details

Siemens Industrial Communication

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## Switching & Routing in Industrial Networks with RUGGEDCOM (IK-SWIROR) 5 days

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### Requirements

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.

### Description / Objectives

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.

In the Switching part of the course you will learn Switched Network solutions and how they connect to real-time-capable systems in theory and in practice. The Routing section will teach you the fundamentals and knowledge required for planning, configuring, and operating network solutions in industrial environments, which are structured by routing, and their connection to company networks.

## Content

### Switching: Layer 2 Technology Overview

- Commissioning with RUGGEDCOM Operating System
- Port Configuration
- Redundancy in Switched Networks
- Network segmentation with Virtual Local Area Networks
- Increasing bandwidth availability
- Integrating Serial Protocols and Monitoring
- Diagnostics and Troubleshooting

### Routing: Layer 3 Technology Overview

- Commissioning with ROX Operating System
- LAN, IP and WAN interfaces
- Internet Protocol Services
- Router redundancy
- Static Routing and Dynamic Routing

## Target Group

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

## Contact Information

**SIEMENS MALAYSIA SDN. BHD. (93008-X)**  
**HRDF Training Provider ID: 13213/82**

Digital Industries,  
SITRAIN Training Room,  
Level 15-1, CP Tower, No. 11, Jalan 16/11,  
Pusat Dagang Seksyen 16,  
46350 Petaling Jaya, Selangor.

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**E-mail: [industry.my@siemens.com](mailto:industry.my@siemens.com)**

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**Website: [siemens.com.my/SIRT](https://siemens.com.my/SIRT)**

## Bank Details

**Bank Name:** Deutsche Bank (M) Bhd

**Bank Account Number :** 0020768000

**Bank Address :** 18th – 20th Floor, Menara IMC 8,  
Jalan Sultan Ismail,  
50250, Kuala Lumpur

**Bank Swift Code :** DEUTMYKLXXX

## Daywise Schedule

Day	Time	Topics
Day 1	09:00 Hrs – 10:00 Hrs 10:00 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	Layer 2 Technology Overview Switching in Industrial Ethernet Networks Commissioning with RUGGEDCOM Operating System (ROS) Port Configuration
Day 2	09:00 Hrs – 10:00 Hrs 10:00 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	Redundancy in Switched Networks (Rapid Spanning Tree Protocol) Network segmentation with Virtual Local Area Networks (VLAN) Increasing bandwidth availability (Link Aggregation) Integrating Serial Protocols
Day 3	09:00 Hrs – 10:00 Hrs 10:00 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	Monitoring (ROS) Diagnostics and Troubleshooting (ROS) Routing: Layer 3 Technology Overview Commissioning with ROX Operating System
Day 4	09:00 Hrs – 10:00 Hrs 10:00 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	LAN, IP interfaces and WAN interfaces Internet Protocol Services Router redundancy (VRRP) Static Routing
Day 5	09:00 Hrs – 10:00 Hrs 10:00 Hrs – 12:00 Hrs 12:00 Hrs – 12:30 Hrs	Dynamic Routing (OSPF) and Link failover Maintenance and Troubleshooting Exercise Summary and Feedback

### **Break Timings:**

10:00 Hrs – 10:15 Hrs	Morning Tea Break
12:00 Hrs – 13:00 Hrs	Lunch Break
15:00 Hrs – 15:15 Hrs	Afternoon Tea Break
17:00 Hrs – 17:15 Hrs	Recess & End of Day