

# Industrial Wireless Networking for Instrumentation and Control Training Course

8 – 12 February 2027
Sharm El-Sheikh

AGILE LEADERS
Training Center

# Industrial Wireless Networking for Instrumentation and Control Training Course

**Ref:** 1886_240605 **Date:** 8 – 12 February 2027 **Location:** Sharm El-Sheikh **Fees:** 5200 Euro

## Overview

Industrial Wireless Networking for Instrumentation and Control Training Course is a one-week intermediate programme for instrumentation, automation, OT network, maintenance, and project personnel who need an Industrial Wireless Deployment Pack. Participants connect radio fundamentals, industrial Wi-Fi, wireless sensors, gateways, coexistence, secure control-system integration, commissioning, monitoring, and troubleshooting with traceable lifecycle decisions. The course does not authorize safety-critical control changes, spectrum decisions, or vendor configuration outside approved procedures. Agile Leaders Training Center delivers this industrial wireless lifecycle course.

## Who Should Attend

- Instrumentation and control engineers planning wireless connectivity
- Automation and OT network personnel supporting plant communications
- Maintenance and reliability staff responsible for wireless devices
- Project engineers coordinating sensors, gateways, access points, and vendors
- Technical assurance staff reviewing availability, security, and lifecycle evidence

Participants should understand basic instrumentation and IP-network terminology. The course focuses on application review and evidence rather than licensed radio work or safety-system authorization.

## Departments and Industries

The course supports process plants, utilities, manufacturing, energy, water, mining, and industrial facilities.

- Instrumentation, control, and automation
- OT networking and industrial cybersecurity
- Maintenance, reliability, and asset integrity
- Projects, engineering, and commissioning
- Operations and technical assurance

## Learning Objectives

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

- Distinguish industrial wireless applications, architectures, and operating limits
- Assess radio coverage, interference, coexistence, and availability evidence
- Compare industrial Wi-Fi, wireless sensors, gateways, and integration paths
- Review segmentation, authentication, encryption, and monitoring boundaries
- Plan commissioning, performance verification, maintenance, and troubleshooting
- Build a documented Industrial Wireless Deployment Pack

## Course Agenda

### Day 1: Industrial Wireless Applications and Architecture

- Instrumentation Use-Case and Criticality Register
- Industrial Wi-Fi, Sensor Network, and Gateway Architecture Map
- Field, Control, OT, and Business Network Boundary Diagram
- Latency, Availability, Reliability, and Data-Rate Requirement Matrix
- Responsibility, Competence, and Change-Control Checklist

### Day 2: Radio Survey and Coexistence Planning

- Frequency, Channel, Bandwidth, Power, and Antenna Fundamentals
- Path Loss, Obstruction, Reflection, Multipath, and Coverage Review
- Site-Survey Measurement and Coverage Evidence Worksheet
- Interference Source and Wireless Coexistence Register
- Channel, Location, Redundancy, and Capacity Planning Exercise

### Day 3: Secure Integration with Instrumentation and Control

- Wireless Sensor, Access Point, Gateway, and Controller Interface Map
- Device Identity, Authentication, Encryption, and Key-Lifecycle Review
- OT Zone, Conduit, Segmentation, and Access Boundary Diagram
- Protocol Translation, Data Ownership, and Time-Synchronization Checklist
- Remote Management, Logging, Monitoring, and Escalation Matrix

### Day 4: Installation, Commissioning, and Performance Verification

- Equipment Location, Environment, Power, Earthing, and Enclosure Checklist
- Configuration Baseline, Naming, Addressing, and Inventory Register
- Connectivity, Coverage, Roaming, Latency, and Packet-Loss Test Plan
- Alarm, Failure, Recovery, and Degraded-Mode Verification
- Handover Evidence, Acceptance Record, and Operations Readiness Review

## Day 5: Monitoring, Troubleshooting, and Lifecycle Governance

- Signal, Noise, Utilization, Availability, and Battery Health Dashboard
- Coverage Gap, Interference, Congestion, and Device-Failure Fault Tree
- Firmware, Credential, Spare, Backup, and Obsolescence Lifecycle Register
- Incident, Change, Maintenance, and Performance Review Workflow
- Capstone Exercise: Industrial Wireless Deployment Pack

## Practical Exercises

Guided exercises turn application requirements and field evidence into controlled wireless decisions.

- Build an instrumentation wireless use-case register
- Review a site survey and coexistence record
- Map gateways and secure OT integration boundaries
- Prepare commissioning and performance-verification evidence
- Diagnose a wireless fault and write a lifecycle recommendation

## FAQs

### Is this a general enterprise Wi-Fi course?

No. It focuses on industrial instrumentation, control-system boundaries, reliability, coexistence, commissioning, and lifecycle evidence.

### Does the course cover wireless sensors and gateways?

Yes. Participants review their roles, interfaces, data paths, commissioning evidence, and maintenance implications.

### Does the course teach safety-critical wireless control?

No. It explains application criticality and escalation boundaries without authorizing safety functions or unapproved control changes.

### What practical work is included?

Exercises cover use-case definition, survey evidence, coexistence, secure integration, commissioning, monitoring, and fault analysis.

### What will participants take back to work?

An Industrial Wireless Deployment Pack containing requirements, architecture, coexistence, security, commissioning, performance, and lifecycle records.

AGILE LEADERS
Training Center

## Conclusion

Participants return able to review industrial wireless applications, question evidence, coordinate commissioning, and support reliable lifecycle decisions across instrumentation, control, OT networking, maintenance, and projects.