

Industrial Ethernet II – the technology in detail (CB2)

Industrial networks must connect an ever increasing number of technologies and users - while at the same time becoming more flexible.

To keep pace with the growing size and performance requirements of these complex networks, system administrators and support technicians need comprehensive technical and practical knowledge about Industrial Ethernet.

Languages:

CB2e	English
CB2f	French
CB2d	German
CB2n	Dutch
CB2p	Portuguese
CB2s	Spanish

Duration:

2 Days
09:00 - 16:00

Price:

£675 ex. VAT

Schedule / Location:

<http://www.hirschmann.co.uk>



Recommended for
[certification](#) as
Hirschmann Industrial
Technology Professional

Target Group

System Engineers, Network Designers, and Support Technicians who are building, supporting, or migrating an Industrial Ethernet network.

Objective

This course builds on the experience gained from "Industrial Ethernet I" (CB1), providing network experts with intensive theoretical and practical knowledge about Industrial Ethernet.

A special emphasis is placed on deploying Ethernet in complex industrial environments. This enables the participants to provide comprehensive support, both for demanding projects and their daily work.

Prerequisites

Basic knowledge is required, for example previous attendance of the "Industrial Ethernet I - the technical fundamentals" (CB1) course.

If available, the participant should bring a laptop with Ethernet connection and an operating system CD. Administrator rights are required.

Seminar Content

Switching

- RSTP
- Flow Control
- VLANs
- Quality of Service (QoS)

Multicasting

- Mapping IP addresses to MAC addresses
- GMRP
- IGMP

Routers and Routing

Protocols

- RIP
- OSPF
- Router Redundancy

Other Protocols

- SDH
- Sonet

Interconnection Possibilities

- Routing to other Ethernet networks
- Routable and not routable protocols
- Gateways to existing proprietary networks

Fieldbusses and Ethernet

- Overview of the current situation
- EtherNet/IP
- Ethernet Powerlink
- Modbus / TCP
- DeltaV
- ProfiNet
- Real-time
- Determinism

TCP/IP in Detail

- IP
- TCP
- UDP
- Subnetting and Supernetting

Controlling Data Traffic

- Local vs. remote
- Bandwidth requirements
- Peak and average traffic
- Broadcast limitation
- Traffic analysis

Security

- Targets and risks
- Access Control Lists
- VLANs
- Ingress and Egress Rules
- Firewalls and NAT

Managing TCP/IP Networks

- SNMP
- RMON
- Network management tools