

# Manchester Metropolitan University Automation Systems Centre Certified PROFINET Engineer Course



An Internationally Accredited In-depth 3-day course covering PROFINET network operation, design, and commissioning.

## Who should attend this Course?

This course is designed for everyone who wants to know the theoretical and practical aspects of PROFINET, for example:

- Advisors and consultants,
- System integrators,
- Project leaders,
- Programmers,
- Hardware engineers,
- Installers,
- Suppliers, and
- Lecturers.

Those who pass the written examination and practical test will gain a valuable and internationally recognised certificate as to their competence to design and trouble-shoot PROFINET networks.

Graduates of the course will also have the right to have their name listed in the Certified PROFINET Engineer section of the PROFIBUS web site at [www.profibus.com](http://www.profibus.com).

## What will I learn on the course?

This is an in-depth course that teaches the details of what goes on in a PROFINET network. You will learn about the telegrams that pass between PROFINET devices, how the network is configured and started up, how the network deals with conflicts and other errors. You will learn how to use PROFINET tools to capture and interpret telegrams and quickly locate a wide range of conflicts and faults. You will see first hand the effects of failed devices, wiring and layout faults, configuration errors etc.

## What are the course subjects?

### Introduction

- Current PROFIBUS situation
- Why PROFINET?
- Application areas of PROFINET

## PROFINET Basics

- Device types
- RT and IRT
- IO and CBA
- Addressing
- Performance and cycle times
- Proxies
- Configuration steps
- GSD files



## Ethernet overview

- Access method
- Frame structure
- MAC and TCP/IP addresses
- Switches
- Cabling guidelines for 100 Mbps and 1 Gbps
- Cable types
- MLT-3 and 4B/5B coding
- Connectors
- IWLAN
- Fibre Optic

## PROFINET IO technology

- Setting Device Names and IP addresses
- Watchdog
- Messages
- Send cycles
- Hardware and software of a device

## Other topics

- Certification of devices
- Available tools
- PROFINET versus other Ethernet systems
- Cost comparison between PROFINET and PROFIBUS
- Peek in the future

## Practical exercises

- Assembling connectors
- Testing cables
- Configuring switches
- Analysing messages
- Configuring a PROFINET installation
- Integrating a PROFIBUS segment



### What equipment will I use?

Students on the course work in pairs, each with a laptop PC running PROFINET applications and freely available analysing software, Wireshark. In addition each pair has a dedicated rack of PROFINET devices.

### What happens if I fail the test?

Because this certification is recognised worldwide as a mark of quality training, the course test is not trivial. However, the instructor will provide you with all the information and practice that you need to pass the examinations. You will also get plenty of hands-on practice with the analyser and other tools to help you through the practical test. A small percentage of delegates will unfortunately fail to achieve a pass grade; however we will provide the opportunity to retake the failed tests at a later date, free of charge.



**Booking Information -** Download the booking form and further details from: [www.profi-bus.co.uk](http://www.profi-bus.co.uk)

For dates, prices, booking information & onsite courses contact:

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### **In-Depth Technical Information**

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