

**PROFINET Developers Course- Day 1,**

- **Introduction**
  - Organization, & Market Information
  - Supported Technology ( PROFIBUS DP & PA, PROFINET, IO Link)
  - Industrial Ethernet Market
  - PROFINET Overview
  
- **Network Infrastructure**
  - Network Switches, hubs, routers
  - Port mirroring, network tap
  - Wireless for PROFINET
  
- **PROFINET IO**
  - PROFINET in OSI model
  - Device Certification requirements
  - IO Controller, IO Device, IO Supervisor
  - Real Time Communications
  - Device Slot/ subslot model
  - Application and Communication Relations
  - Start up sequence
  - Read & Write Record services
  - Model for Diagnostics
  
- **PNIO Engineering**
  - GSD File import
  - PROFINET Configuration
  - IO cycle times
  - Use of Proxies
  - Download Device names
  
- **PNIO Ethernet Frames**
  - Standard Ethernet Frame, & VLAN
  - PROFINET Ethertype & Frame ID
  - Different PROFINET Frames (Connect, Parameter, Data Exchange,...)
  - Provider and Consumer status
  - Watchdog timer
  
- **Wireshark**
  - Use of Wireshark
  - PROFINET Colouring
  - Capture of Startup, Data exchange, and alarms
  
- **PROFINET XML-Viewer**
  - GSD File naming
  - Vendor/Device ID
  - Browser and XML views
  - Contents of GSD file
  
- **Practical Exercises**

Each topic will have a associated practical exercise

## **PROFINET Developers Course-Day 2**

- **Introduction**
  - ComDec
  - Trainer's Background
  - Course contents
  
- **Development Kits**
  - Overview
  - Development Kit selection
  
- **PROFINET ASIC**
  - ERTEC 200
  - ERTEC 400
  
- **PROFINET IO Stack**
  - Overview
  
- **Practical demonstration "Working with Development kit"**
  - Start up
  - Eclipse Environment
  - Building application software
  
- **Debugger**
  - Jtag Debugger
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- **Application Program Interface**
  - API-RT
  - API-IRT
  
- **GSD File**
  - GSD file Creation
  
- **Working with Development kit-Part 2**
  - Standard Ethernet Controller
  - Adaptation to other Operating Systems