



Training Course :

Best Practice in Industrial Data Communications

Training Course For One Week In

Turkey , Istanbul , Wyndham Grand
Istanbul Levent

Which Be Held As Under Details :



Abar Solutions Petroleum Consultancy Invite Your Employee To Participate With Us In Special Training Course As Under Details :

| Course Name | | Best Practice in Industrial Data Communications | | | |
|-------------|------------|---|------------|------------|--|
| Code | Period | Language | Start | End | Location |
| ICT 014 | 5 Days | English | 07/08/2017 | 11/08/2017 | Turkey , Istanbul , Wyndham Grand Istanbul Levent |
| | | | 04/09/2017 | 08/09/2017 | |
| | | | 09/10/2017 | 13/10/2017 | |
| | | | 13/11/2017 | 17/11/2017 | |
| | | | 18/12/2017 | 22/12/2017 | |
| | | | 15/01/2018 | 19/01/2018 | |
| | | | 12/02/2018 | 16/02/2018 | |
| | | | 12/03/2018 | 16/03/2018 | |
| | | | 23/04/2018 | 27/04/2018 | |
| | | | 14/05/2018 | 18/05/2018 | |
| | | | 11/06/2018 | 15/06/2018 | |
| 09/07/2018 | 13/07/2018 | | | | |

**** The Fees Includes : Lecturer , Training Material , Training Room With One Coffee Break Daily , Certificate Of Attendance In Last Day Training Course ****

Course Description

- ⇒ The objective of this workshop is to outline the best practice in designing, installing, commissioning and troubleshooting industrial data communications systems. In any given plant, factory or installation there are a myriad of different industrial communications standards used and the key to successful implementation is
- ⇒ the degree to which the entire system integrates and works together. With so many different standards on the market today, the debate is not about what is the best - be it Foundation Fieldbus, Profibus, Devicenet or Industrial Ethernet – but rather about selecting the most appropriate technologies and standards for a given application and then ensuring that best practice is followed in designing, installing and commissioning the data communications links to ensure they run fault-free.

- ⇒ The industrial data communications systems in your plant underpin your entire operation. It is critical that you apply best practice in designing, installing and fixing any problems that may occur.

Course Objectives

- ⇒ Best practice in industrial data communications design, installation and commissioning
- ⇒ Practical hands-on experience in jointing, splicing and testing of copper and fiber based cabling
- ⇒ How to design and install your own fully operational industrial data communications systems
- ⇒ How to integrate different industrial communications protocols and standards into a complete working system

Course Content & Outlines

⇒ **INTRODUCTION**

- Overview of the course
- OSI model
- Systems engineering approach
- Attributes of typical communications systems
 - Media
 - Physical connections
 - Protocols
 - Applications
- General issues
 - Noise
 - Earthing and grounding
 - Shielding
 - Protection against dust and moisture (IP ratings)

⇒ **FUNDAMENTALS**

- Copper/fiber
 - Cable standards
 - Cable distribution standards
 - Connector standards
 - EMC conformance standards
 - Splicing
 - Connector attachment

- Drivers and detectors
- Grounding
- Termination
- Protection against transients
- Physical layer standards
 - EIA-232
 - EIA-485
 - 4-20 mA
 - IEC 61158-2 (Intrinsic safety)
- Industrial networks
 - Industrial Ethernet
 - ASi
 - DeviceNet
 - Profibus
 - Foundation Fieldbus
 - Modbus Plus
 - Data Highway Plus
 - HART
 - Ethernet/IP
 - ControlNet
 - ProfiNet
 - Foundation Fieldbus HSE
- Industrial protocols
 - TCP/IP
 - Modbus
 - Modbus TCP
 - DNP3
 - 60870 SCADA
- Other technologies
 - VSAT
 - Wireless LAN
 - Wireless point to point

⇒ **SELECTION METHODOLOGY**

- Which standards/technologies to use:
 - Field management (device) level
 - Process management (operator) level
 - Business management (enterprise) level
 - Long distance SCADA/telemetry links

⇒ **INSTALLATION METHODOLOGY**

- Copper cabling and connectors
 - System design
 - Installation
 - Tips, tricks and pitfalls
- • Fiber cabling and connectors
 - System design
 - Installation
 - Tips, tricks and pitfalls
- Wireless
 - System design
 - Installation
 - Tips, tricks and pitfalls

⇒ **COMMISSIONING/TESTING/ TROUBLESHOOTING**

- Copper infrastructure
- Fiber infrastructure
- Wireless infrastructure
- Networks
 - Physical layer issues (OSI Layer 1)
 - Data link layer issues (OSI Layer 2)
 - Network layer issues (OSI Layer 3)
 - Transport layer issues (OSI Layer 4)
 - Application and "user" layer issues
 - (OSI Layers 7-"8")
 - Client/server issues

⇒ **CONCLUSION**

- Summary
- Open forum
- Closing of workshop