

Essentials of Optical Communications & DWDM

"Key concepts and terminology related to fibre optical communications"

Overview

This seminar will provide a brief overview of the capabilities and issues related to optical communications technology, DWDM systems and how the network is evolving. It will highlight the relationships between the technical teams and the business operations to ensure a cost effective infrastructure that provides customers with a quality experience. All of the terminology and jargon is explained in a clear and precise manner as the course progresses by our highly skilled trainer.

You will be able to

- Understand the properties of light
- Explain the principles of fiber optics
- Explain what is WDM and DWDM
- Identify the key different uses of fibre in communications networks
- Identify key components & terminology in fibre networks
- Understand how data is transported over fibre
- Describe how fibre networks support networking globally

Who can benefit

This seminar is designed for those who need a basic understanding of the key concepts and terminology that is prevalent in the industry, how the various technologies relate to each other and the impact on business operations

Pre requisite knowledge

None

Outline

Introduction

- What are the critical issues facing telecoms operators?
- How has the business environment changed?
- Increased local & international competition
- Saturation of the voice market
- Regulatory considerations & issues
- Disruptive services
- How does fibre play a role?
- Quality / Cost considerations

Overview of Optical Fiber Communication

- History of optical communications
- What is the electromagnetic spectrum
- Properties of light
- Guided light
- Free space optical communications
- How does fibre work?
- How do we get information into the fibre?
- Different types of fibre cables

- Singlemode & multimode cables
- Light sources: lasers & LEDs
- Optical receivers
- A typical optical network architecture
- Laser & fibre safety

Fibre Network Types & Applications

- Fibre Network Terminology
- Fibre in the telephone network
- What are PDH and SDH
- The Internet
- Submarine cabling
- Global fibre networks
- What is "dark fibre"
- Malaysia's fibre architecture
- What is Fibre to the Home (FTTH)
- What are passive optical networks (PON)
- FTTH system architecture
- Customer premise networking & example FTTX implementations
- Mobile networks: backhaul and fronthaul

What is DWDM

- The principles of wavelength division multiplexing (WDM)
- How DWDM works
- DWDM system components & operation
- Estimating data rates
- Typical deployments

How is Fibre installed

- Typical deployments
- Tools & equipment
- Correct cable placement
- Preparing the installation environment
- Best practices in cable installation
- Installation safety & troubleshooting
- Example installations

DURATION	1 day
MAXIMUM CLASS SIZE	14