

## ENG-506 - Wi-Fi/WiMAX: Planning, Design & Deployment

### Description

A 5-day Training Program to provide participants with essential knowledge of WiMAX and Wi-Fi technologies, applications and services, as well as regulatory, marketing and business objectives.

### Objectives

- Present all relevant and important topics from basic RF theory to link budget math, including:
  - Standards: PHY and MAC protocol layers, security, QoS and interoperability
  - Technology: equipment manufacturers, products, systems and services
  - Regulatory: spectrum policies and licensing
  - Planning: frequency, capacity, coverage and interference
  - Design: site survey and selection, engineering and network design
  - Deployment: project management, vendor selection, installation and commissioning
  - Optimization: testing and troubleshooting
- Identify the components of WiMAX and Wi-Fi products and systems
- Explain the detailed layers and protocols covered in the IEEE standards such as 802.16-2004 for WirelessMAN, 802.11 for WirelessLAN and 802.16e for mobility
- Provide an in-depth understanding of wireless voice, video and data access systems from a technical perspective combined with regulatory, market and business objectives
- Develop the skills to plan, design and deploy an efficient and profitable wireless data network
- Plan for growth, operational support and emerging technologies

### Topics

#### Part I - Wireless overview

#### General Overview of WiMAX and Wi-Fi

- Identify the components of WiMAX and Wi-Fi systems
- Explore the various standards, forums and suppliers
- Understand the network architecture, deployment challenges, marketing and business opportunities

## **Part II - Wi-Fi**

### **Radio Frequency (RF) fundamentals**

### **Spread spectrum technologies**

### **Organizations and standards**

### **PHYsical and MAC layers**

### **Network operations**

### **Hardware installation, configuration and management**

### **Troubleshooting Wireless LANs**

### **Wireless LAN Security**

## **Part III - WiMAX**

### **Overview**

- Basic network architecture
- Regulatory and spectrum policies
- Frequency bands and standards
- Applications and services
- Products and systems
- Current deployments

### **IEEE Standard for Local and Metropolitan Area Networks**

- Service specific convergence sublayer
- Medium access control common part sublayer
- Privacy sublayer
- Physical sublayer
- Quality of Service (QoS)
- Emerging standards

### **Engineering planning, design, deployment and optimization**

- Project management
- Radio and traffic engineering
- Site engineering and planning
- Network, backhaul and core engineering

- Commissioning and troubleshooting
- Network management systems

### **Marketing and business opportunities**

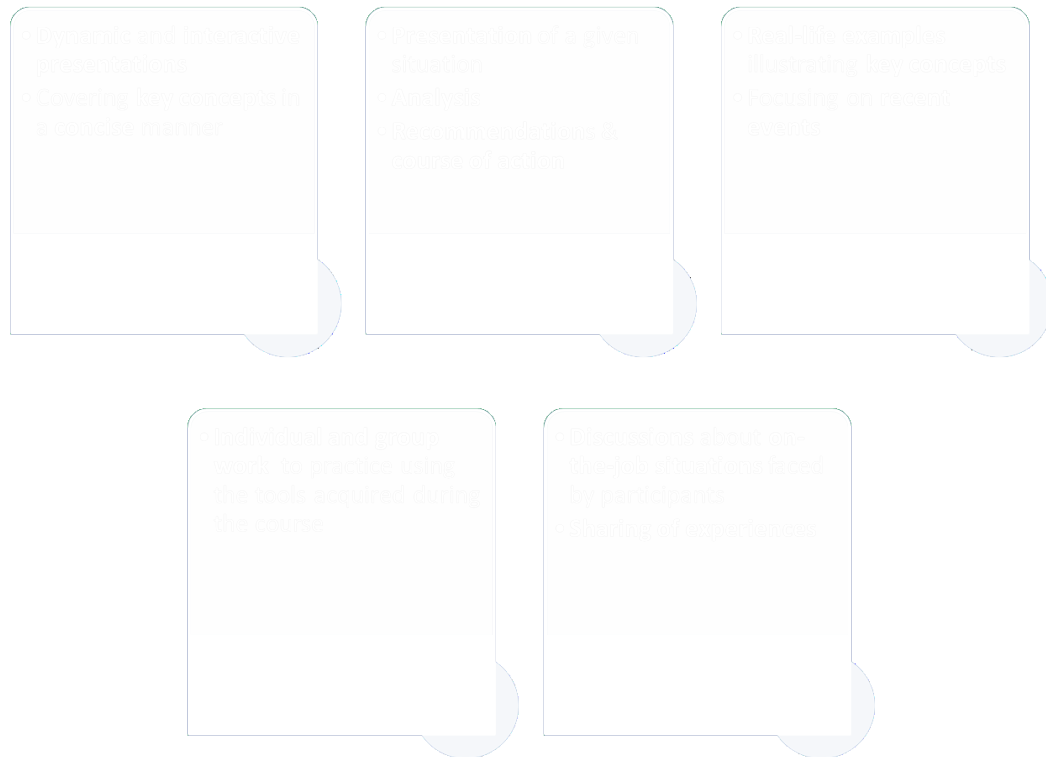
- Market analysis summary
- Market segmentation and service offering
- Strategy and implementation
- Sales, cost of sales, capital and operational costs
- Personnel plan

### **Target Audience**

- Telecommunications engineers, technicians and personnel responsible for the design, planning, deployment and management of wireless voice, video and data access networks
- Entrepreneurs, managers, marketing and sales professionals looking to complement their skill-set by gaining a good understanding of WiMAX and Wi-Fi technologies, applications and services, market and business opportunities
- Telecommunications regulators responsible for spectrum policies, coordination and standard radio system plans

### **Methodology**

A combination of engaging activities and dynamic presentations to stimulate and maximize participants' learning.



## Location

A selection of Neotelis' training courses is held in various cities around the world. Please contact us at [training@neotelis.com](mailto:training@neotelis.com) for the complete Yearly Training Calendar.



Neotelis can also deliver in-house sessions of this course specifically for your organization. Please contact us at [training@neotelis.com](mailto:training@neotelis.com) for more information and a Proposal.

**About Neotelis**

Neotelis provides training, consulting, conferences and publications to the telecommunications industry worldwide. Its team of senior experts has trained thousands of executives and managers working for operators, regulators, policy-makers and governments in over 120 countries around the world.

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