

Course Outlines

Technical Overview of 802.16e

- 802.16 Family of Standards
- 802.16e vs. 802.20, WiBro, and 3G
- 802.16e Physical Layer Description
- OFDMA Basics
- What is Scalable OFDMA (SOFDMA)
- OFDMA Sub-Channelization
- Advanced PHY Layer Features
- MAC Layer Description
- Quality of Service Support
- Hybrid ARQ
- Fast Scheduling Service
- Mobility Management
- Power Management
- Bandwidth Efficient Handoff
- Security

Advanced and Key Features of Mobile WiMAX

- Tolerance to Multipath and Self Interference
- Scalable Channel Bandwidth
- Orthogonal Uplink Multiple Access
- Support for Spectral-Efficient TDD
- Frequency Selective Scheduling
- Smart Antenna Technologies
- Fractional Frequency Reuse
- Multicast and Broadcast Service (MBS)

WiMAX Mobility Operation and Hand-off

- Network Reference Model
- Base Station Sector (BS)
- Mobile Subscriber Station (MSS)
- Handoff (HO) Process: Hard HO, Soft HO
- Network topology advertisement
- MSS scanning of neighbor BS
- Example of Handoff Process
- Scanning Interval

Mobile WiMAX System Performance Evaluation

- Mobile WiMAX System Parameters
- Mobile WiMAX Link Budget
- Mobile WiMAX MAP Reliability and Overhead
- Mobile WiMAX System Performance

Who Should Attend: This course is designed for anyone who requires knowledge of Mobile WiMAX and its standard 802.16e. Anyone who wants to compare the Mobile WiMAX technology with other alternative technologies such as 3G.

Course length: 4 Days

Prerequisites: Basic understanding of RF fundamentals, Fixed WiMAX and 802.16-2004 is recommended but not necessary

Get Certified



WiMAX & EION Certified Wireless Engineer

Move your career ahead by distinguishing yourself in the wireless industry with EION/Wi-LAN professional certification

Certification Courses – First TWO courses are required for WiMAX Essentials Wireless Engineer Certificate

1. RF and Wireless Fundamentals
2. WiMAX Fundamentals
3. WiMAX RF Planning, Network Design, & Implementation
4. 802.16e Mobile WiMAX Fundamentals

EION Product Specific Courses – Each Course qualify for EION Wireless Engineer Certificate

1. Libra MAX Network Design, Installation, & Troubleshooting
2. LibraPlus5845 Network Design, Installation, & Troubleshooting
3. Ultima3 Network Design, Installation, & Troubleshooting
4. VIP 110-24 Network Design, Installation, & Troubleshooting
5. LibraPlus 5845 Network Design, Installation, & Troubleshooting



802.16e Mobile WiMAX Fundamentals

Training Course

www.eionwireless.com

	Code	Course Name	Duration
Training Course	6100-3009	1- 802.16e Mobile WiMAX Fundamentals	4 Days

About EION

On April 19, 2006 EION Wireless Inc. of Ottawa, Canada acquired Wi-LAN's VIP110-24, Ultima3, TEMux & LibraMX product lines. EION Wireless Inc. has accepted Global responsibility for all Warranty Repairs and non Warranty Repairs for all existing and new Wi-LAN product installations.

EION is committed to continue product developments for its newly acquired Wi-LAN Product families including the introduction of EION's new WiMAX Certified LibraMAX Base Station Blades & LibraMAX Subscriber Stations for EION's existing Wi-LAN LibraMX 3.5GHz WiMAX Platform System.

EION Wireless Inc. is a Canadian Based global provider of wireless broadband communication products and technologies, specializing in high-speed Wireless Internet Access, LAN/WAN extension and Enterprise Wireless broadband data communication access. EION is a leader in Embedded IP Intelligence Technology & IP over Satellite Solutions for mission critical Telecom and Defense Applications. EION intends to integrate its Embedded IP Intelligence Technology into its LibraMX and LibraMAX 3.5GHz WiMAX Platform Systems.

Wi-LAN is the chairman of the OFDM Forum and a founding member of the WiMAX Forum. Wi-LAN also Chaired WiMAX's Technical Working Group (TWG) responsible for WiMAX interoperability, testing & certifications.

Wi-LAN's W-OFDM patent is necessary for the implementation of devices using WiFi's IEEE802.11a, IEEE802.11g & ETSI HiperLAN/2 Wireless LAN standards as well as WiMAX IEEE802.16-2004, 802.16e & ETSI's HiperMAN Wireless WAN standards.

EION's & Wi-LAN's Broadband Wireless products are known worldwide for their high quality and industry-leading technology.

About the Instructor

Dr. Waleed Hosny is a Research Analyst in Computing and Systems Technologies at the Electronics Research Institute of Egypt. Waleed's research areas are in Wireless Communications and IP Mobility. He holds B.Sc., M.Sc., and PhD in Communications Engineering from Cairo University of Egypt. Waleed is an active member of the IEEE (Institute of Electrical and Electronics Engineers) Association since 1999 and published many papers in international journals and magazines.

He has been involved with Telecommunications and Information Technology since 1994. Waleed has held several senior management positions and Consultancy roles for many major private and public sector corporations and to many USAID projects in Egypt in the areas of data and voice networks, and Internet/Intranet. Waleed has several years of project management experience working with diversified, cross functional teams.

Waleed, held the position of International Applications Engineer at Wi-LAN Inc. and was directly involved in Wi-LAN's LibraMX 4th generation OFDM 256 FFT Engine Design effort and in the deployment and



About EION's VP of Sales Africa, Middle East, and Central Asia

Mr. Hassan Abdelghany has extensive knowledge of the Broadband Wireless and telecommunications sector. His experience over the last decade servicing major National Licensed Operators and Major Enterprise Customers in the Middle East region will be instrumental to EION's success in our region. As EION's Vice President of Sales for Africa, Middle East and Central Asia regions, Mr. Abdelghany will fulfill EION's mandate to lead the company's sales, marketing and customer support efforts in this important geographical region. Mr. Abdelghany held several Manufacturing Engineering and Senior International Telecom Sales positions in North America and the Middle East Region and holds a Bachelor of Science Degree in Industrial Engineering from the University of Lowell, Lowell, MA, USA



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