WiMAX and 802.16e: Broadband Wireless Standards™

This 2-day course focuses on the contents of the IEEE 802.16-2004 and 802.16e-2005 standards for broadband wireless access technology. The 802.16-based implementations named WiMAX (Worldwide Interoperability for Microwave Access) are used for applications that include mobile broadband, “last mile” fixed broadband connections, hotspot and cellular backhaul, and highspeed enterprise connectivity for businesses.

This course will provide students with detailed knowledge on the contents of WiMAX and 802.16 standards, as well as WiMAX technologies, trends, and issues. Included in the course content is information on emerging IEEE 802.16 working group meetings and letter ballots, which are critical topics for today’s development projects.

This course is designed for students who are working on WiMAX and 802.16-based products and services, or expect to be working on those projects soon. A student who is just beginning to work on broadband wireless projects will gain a fundamental understanding of the 802.16 standards. Students who are working in WiMAX will deepen their understanding of standards issues, operations, and management concerns.

Move your career ahead by distinguishing yourself in the wireless industry with WiMAX Forum professional certification through participation in the WiMAX Forum Certified Training program.

Course Contents:

- **Module 1 Overview of Broadband Wireless Markets, Applications, and Requirements:** Architecture of a Broadband Wireless Access Network; Line of Sight vs. Non-Line of Sight; Mobility; Advanced Antenna Systems; Quality of Service; The role of the WiMAX Forum.

- **Module 2 802.16 High-level Architecture:** Physical Architecture; Protocol Architecture; Time Slots and Time Division Multiple Access; Uplink and Downlink Channel Descriptors and Maps; Time Division Duplex and Frequency; Division Duplex Options; Which Implementation Options are most common?

- **Module 3 802.16 Medium Access Control:** Steps for Joining an 802.16 Network; Addressing and Encapsulation; Bandwidth Requests and Allocation; Automatic Repeat Request (ARQ); Security; Quality of Service Scheduling Rules; MAC Enhancements for Advanced Antenna Systems.

- **Module 4 802.16 Physical Layer:** Why are there so many PHY options?; Multipath: Why multi-carrier approaches?; Orthogonal Frequency Division Multiplexing (OFDM); Multi-carrier OFDM for 2-to-11 GHZ; Licensed Operation; Unlicensed Operation; Digital Signal Processing algorithms beyond the standard; Orthogonal Frequency Division Multiplexing Access; OFDMA for Licensed and Unlicensed Use.

- **Module 5 Mobility Extensions from 802.16e:** 802.16e Adoption Forecast; 802.16e MAC and PHY Enhancements; Scalable OFDMA; Handover; and Cell Selection.

- **Module 6 Standards Progression:** Overview of IEEE standards work from 802.16e through 802.16m.

- **Module 7 WiMAX Profiles:** WiMAX Forum Working Groups and Certification process.
**Course Length:** 2 days

**Course Price:** $1395 US and South America; $2095 plus applicable taxes outside of Americas

The **WiMAX Forum Certified Training Program** provides a comprehensive curriculum of educational programs to WiMAX Forum members and the global WiMAX industry. This exclusive curriculum provides courses designed for both business and highly technical audiences, ranging from introductory technology content to in-depth cellular planning and methodologies to ensure quality assurance. The ultimate goal of the WiMAX Forum is to promote and accelerate the introduction of cost-effective broadband wireless access services into the marketplace. Professionals who understand standards-based, interoperable solutions help enable economies of scale that drive price and performance levels unachievable by proprietary approaches. The WiMAX Forum Certified Training Program curriculum equips industry professionals with the necessary knowledge for successful WiMAX network implementations and helps promote WiMAX industry growth and development.

**DoceoTech Background:** DoceoTech is the leading knowledge-transfer services provider for the Broadband Wireless industry. DoceoTech offers both knowledge-based and certification-skills-based WiMAX training for managers, engineers, network designers, implementers and operators. DoceoTech adds value to its clients operations by certifying that they have the skills to efficiently design and operate customer-satisfying products and networks, which results in increased revenues and reduced costs.

**Informa Telecoms Academy Background:** The Informa Telecoms Academy delivers high quality interactive training courses for the telecommunications sector. As part of Informa Telecoms & Media, we benefit from over 25 years experience analyzing the telecoms industry. Our training programs are delivered worldwide, and used extensively as part of the training and development plans of many large operators, vendors and service providers.