



Motorola

wi4 WiMAX



Definition

WiMAX (Worldwide Interoperability for Microwave Access) provides advanced wireless broadband access in fixed, portable, and mobile environments. Motorola's WiMAX solutions are based on the IEEE (Institute of Electrical and Electronic Engineers, Inc.) 802.16e-2005 standard for fixed and mobile applications. Focused on licensed bands, primarily 2.5GHz, 3.5GHz and 2.3GHz, WiMAX is a wireless alternative to wired broadband access with greater range and bandwidth than WiFi and a roadmap to mobility. An industry consortium known as the WiMAX Forum® manages the certification program for the WiMAX standard and is building an ecosystem to support an end-to-end solution.

WiMAX is Delivering Carrier-grade Services Worldwide

WiMAX commercial deployments are going live all over the world in increasing numbers. These new networks are connecting tens of thousands of people, many for the first time, and surpassing high thresholds for reliable broadband and voice services in demanding markets. Motorola is leading this charge, with one of the first WiMAX Forum Certified™ 802.16e products on the market – the wi4 WAP 25400 access point.

WiMAX untethers broadband and makes it accessible and reliable in all regions of the world for fixed, portable and mobile users. Motorola's shared deployment success with our customers stems from leadership in end-to-end solutions that provide low total cost of ownership and fast deployment. In mature markets, populations in the "digital divide" are finally being given access to the information superhighway – the mass market will soon have access to multi-megabit speeds on the go. Emerging markets are further capitalizing on WiMAX by connecting entire populations to more robust and reliable broadband nationwide, enabling residential, enterprise and governmental applications.

Operators and their WiMAX business plans vary widely. Telcos, cable and new entrant operators find WiMAX as a way to spread broadband and provide a path to mobility. Cellular operators are also finding WiMAX as a useful technology to capitalize on underutilized spectrum, enter the fixed broadband market, or execute innovative business strategies.

WiMAX has proven to be a key all-IP mobile broadband access technology. It is driving the success of operators worldwide.

Motorola's wi4 WiMAX

Motorola, a global leader in mobile WiMAX, has 22 contracts for commercial WiMAX systems with customers in 17 countries and has shipped more than 5,000 access points and hundreds of thousands CPEs and PC cards. Our WiMAX business for contract deployments, trials, and other customer engagements covers 46 countries worldwide. Motorola provides a full end-to-end WiMAX solution that extends beyond just the infrastructure to the IP core, operations and management, full services portfolio, chipsets, customer premises equipment (CPE) and mobile devices.

Motorola's WiMAX solution makes the world one big, never-ending hot spot where service providers can provide high-speed communications to customers whether they are at home, in the office, or on the move. Motorola's wi4 WiMAX solutions

enable service providers to blend their traditional lines of business and position themselves to deliver full suites of voice, video and data wirelessly to fixed, portable and mobile users.

Motorola's WiMAX solutions promise to –

- Deliver the "wireless broadband pipe", enabling rich-media, bandwidth-intensive applications including voice, data and video for fixed, portable and mobile users.
- Interoperate with a vast ecosystem of WiMAX networks, applications, devices and consumer electronics to deliver pervasive coverage and a true "personal broadband" experience.
- Give service providers the opportunity to extend coverage and capabilities with a high-performing, standards-based wireless broadband access portfolio to meet the needs of residential, enterprise and government.
- Be cost-effective and go where teledensity has historically been low.

Key Benefits

- Industry acceptance of WiMAX by a growing population of more than 530 companies that are members of the WiMAX Forum® - as of August 2008.
- Motorola end-to-end infrastructure, devices and professional services that ensure on-time deployment, low total cost of ownership, and reliable end-user services.
- Motorola Common Broadband Platform supporting both LTE and WiMAX base stations. Advanced telecommunications technologies line-up: S-OFDMA (Scalable - Orthogonal Frequency Division Multiple Access) – more bits per hertz and improved mobility performance; all-IP architecture – cost effective; MIMO (Multiple Input Multiple Output) and Smart Antennas – better coverage.

Motorola WiMAX Network Deployments*

- Wateen (Pakistan)
- Sprint Nextel (USA)
- Clearwire (USA)
- VTR (Chile)
- Agni Systems (Bangladesh)
- NeckarCom (Germany)
- Mena Telecom (Bahrain)
- Warid Telecom Uganda
- Taiwan Far EasTone Telecom
- Mobilink (Pakistan)
- Atheeb (Saudi Arabia)
- First International Telecom (Taiwan)
- TDF (France)
- REDtone (Malaysia)

Motorola WiMAX Trials*

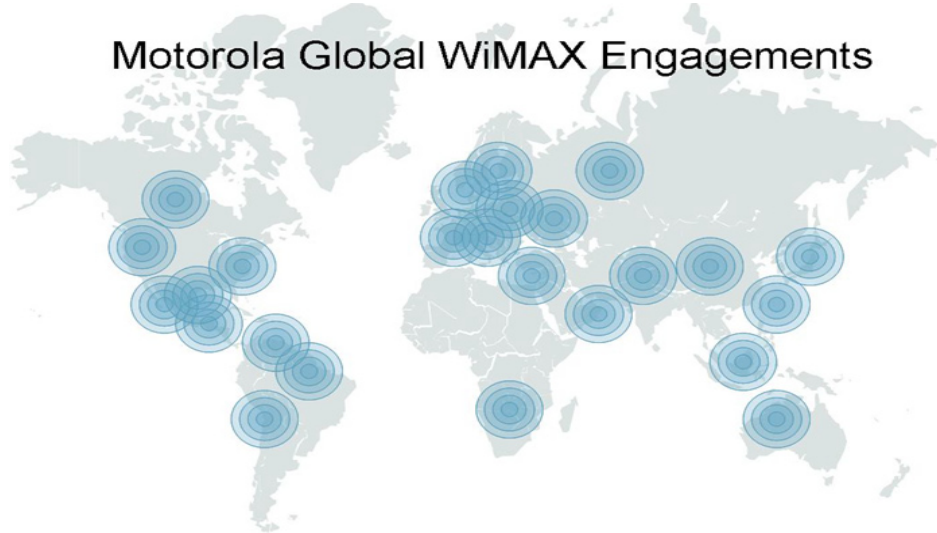
- Maxis (Malaysia)
- SOFTBank (Japan)
- Sprint Nextel (USA)
- TVA (Brazil)
- Vietnam Posts and Telecommunications Group (VNPT - Vietnam)
- Primus Canada and Mipps
- Bolloré Télécom (France)
- Advanced Info Service (Thailand)
- United Information Highway (Thailand)

(*) Publicly announced engagements as of August 2008.

Anticipated Growth of WiMAX

The WiMAX Forum® projects more than 133 million WiMAX users globally by 2012 and that approximately 70 percent of them will utilize mobile and portable WiMAX devices to access broadband Internet services. According to the WiMAX Forum, there are more than 260 service providers deploying WiMAX services in 110 countries worldwide.

Motorola Global WiMAX Engagements



Typical Service Providers

Wireline Operators – compete in new geographies with future potential for adding mobile offerings.

Wireless Cellular Providers – enter fixed broadband markets, add data-play (2G operators), or complement data-play (3G operators).

Wireless Internet Service Providers – become a network operator and provide nomadic broadband or mobility as a differentiation in the market.

Cable Operators – “mobilize the triple-play” or extend reach of broadband.

Typical End-Users

Residential – Internet connectivity, Voice over IP (VoIP), and media mobility in and outside the home.

Enterprises & Municipalities – keep workers and facilities connected to access company networks and applications.

Motorola's WiMAX End-to-End Portfolio:

- WiMAX solutions that can support diverse deployment scenarios and business models
- System design centered around lowering OpEx and Total Cost of Ownership - An AP – CPE combination that reduces the number of AP sites needed
- Access points that include ground-based and tower-top options (zero footprint, remote RF head for zero path loss)

- High performance CPEs with 5db greater receive sensitivity than WiMAX standard
- World-class WiMAX mobile devices
- Comprehensive professional services that deliver optimal networks
- Fast hand-offs between base stations for high quality mobile voice connectivity
- Efficient, flat IP-based network architecture, with capabilities to disaggregate bearer and control traffic
- Advanced antenna technologies such as MIMO and dynamic beam-forming for better capacity, coverage and throughput
- WiMAX chipsets for mobile devices
- Flexible hardware and software defined radios
- Best-of-breed core components tightly integrated for superior performance of end-to-end system
- Carrier-grade device, element and network management systems

Empowering the Personal Broadband Revolution

Motorola is supporting both WiMAX and LTE as the next generation of wireless technologies in the evolution to 4G wireless broadband. Motorola wi4 WiMAX is already showing the possibilities that widespread wireless broadband enables. These technologies will help accelerate the delivery of the personal media experience in the home, and enable new productivity in enterprise environments.

For more information on Motorola wi4 WiMAX, visit www.motorola.com/wimax. And to learn more about our WiMAX deployments around the world, please visit: <http://www.firstcommunicate.com/motorola/wimax/download/worldTour/>.



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