Motorola

wi4 Mesh

The Meshing Revolution

Motorola's mesh networking solutions enables users to wirelessly access broadband applications anywhere, at anytime - even while in a moving vehicle. Initially developed for secure and reliable military battlefield communications, Motorola's mesh technology serves public safety, public access and public works – either simultaneously or individually. The network can be designed to meet the needs of one, two or all three.

Definition

A mesh network is a set of devices that automatically creates connections and communication paths between themselves and can react to changes such as the addition of or loss of any device. This is commonly referred to as a "self-forming, self-healing network." The Internet is the most common wired mesh. New routing devices connected to the Internet are automatically found and become part of the overall communications network. If any node in the mesh is lost, all communications are routed around to compensate automatically. This makes the network very reliable, flexible and scalable.

Securing Super Bowl XLI

Utilizing a MOTOMESH™ Quattro network, the Miami-Dade, Florida Police Department used mesh video surveillance cameras, providing enhanced public safety and security for all attendees of Super Bowl XLI in Miami in 2007. The technology also provided a highly efficient network platform for security officials to communicate with each other securely, allowing only authorized personnel access to critical data, voice and video information and increasing their overall awareness.

Motorola's extensive portfolio of mesh networking products feature both WiFi mesh solutions that are based on the industry-standard 802.11 protocol and purpose built systems that go well beyond what WiFi can offer for mobile wireless broadband communications. The latest wireless broadband applications such as high-speed data, video and position location services to diverse municipal agencies, as well as WiFi access to the general public.

Mesh technology provides law enforcement and emergency first responders with real-time access to databases, video surveillance cameras and other reporting tools in the field. In most cases, public safety serves as the anchor tenant for the initial deployment of a municipal wireless broadband network, subsequently bringing on other agencies and providing public access. The deployment of Motorola mesh networks helps municipalities spur economic development, eliminate the digital divide and forge stronger communities.

Typical Users

- **Emergency Response** - send information including blueprints, presence of hazardous chemicals and occupancy to fire and rescue teams en route to an emergency situation

- **Law Enforcement** - transmit real-time video feed of car accident back to police headquarters while identifying and alerting the closest patrol car to the accident site

- **Intelligent Transportation Systems** - enable traffic engineers to adjust traffic signals wirelessly to improve traffic flow based on real-time video feeds relaying accidents in a particular area

- **Public Works** - give remote workers the option to enter data on their laptops at their work location to reduce trips back to headquarters and lower error rates

- **Municipalities** – offer WiFi for public access and provide government agencies with wireless access to increase productivity and other uses such as meter reading

- **Service Providers** – expand services offerings, enter new geographies, establish partnerships with municipalities in building intelligent wireless communities

Motorola's mesh network devices use a proven, high-performance, routing and networking engine called MeshConnex™. When mesh network devices are powered by MeshConnex, they turn into a self-forming, self-healing wireless broadband network that reduces the cost of backhaul, deployment time and system engineering resources.

Motorola's unique Multi-Hopping™ technology turns every client device into a router/repeater. As users join the network, they improve network coverage and increase network throughput. Broadband data from Motorola mesh users can "hop" through neighboring devices to communicate with each other – or to reach distant network access points that can connect them to other data and voice networks.

Key Products

MOTOMESH Solo with Mobility Enabled

Access (MEA®) – This single-radio mesh network provides users with a dedicated, robust mobility solution with both infrastructure and client meshing capabilities. MEA works where WiFi won't due to it's extreme interference tolerance. A MOTOMESH Solo network can improve productivity by providing high-speed data, video and location services to mobile users and field personnel.

Recent deployments include: Providence, Rhode Island; Ripon, California; Cocoa Beach, Florida; Buffalo, Minnesota; Cedar Rapids, Iowa; and Kissimmee, Florida.

MOTOMESH Duo – A high-performance, meshed WiFi solution, MOTOMESH Duo is designed to meet strict cost-per-square-mile and return on investment targets. Available in single- or dual-radio configurations, it leverages Motorola's field-proven, MeshConnex routing engine and MeshManager element management system to meet the challenges of demanding multi-use networks. Its small size, minimal visual impact and low-power consumption increase mounting location flexibility.

Recent deployments include Apopka and Kissimmee, Florida; the 2007 Pan American Games, Brazil; and the China Education and Research Network.

MOTOMESH Quattro – This multi-radio broadband solution combines 4.9 GHz licensed mobile broadband radios and unlicensed WiFi radios into a single access point. The MOTOMESH Quattro solution enables truly distinct wireless broadband networks to operate over a common physical infrastructure. MOTOMESH Quattro allows municipalities to serve diverse communities of interest without the risk of public WiFi users overwhelming mission critical mobile broadband users.

Recent deployments include Plano, Texas; Wake County, North Carolina; Riviera Beach, Florida; Los Angeles, California and Macon, Georgia.

Mesh Camera – Integrating Motorola's Mobility Enabled Access (MEA) technology directly into Sony's "IPELA" camera has created a solution that is smaller and more cost effective than conventional wireless video systems. Users can wirelessly access high-quality video feeds – even while traveling at highway speeds. Cameras also act as a "hopping" point for data, further tightening the overall network.

MeshPlanner – A software solution that enables the efficient and cost-effective design of outdoor wireless mesh networks.

Future Growth of Mesh
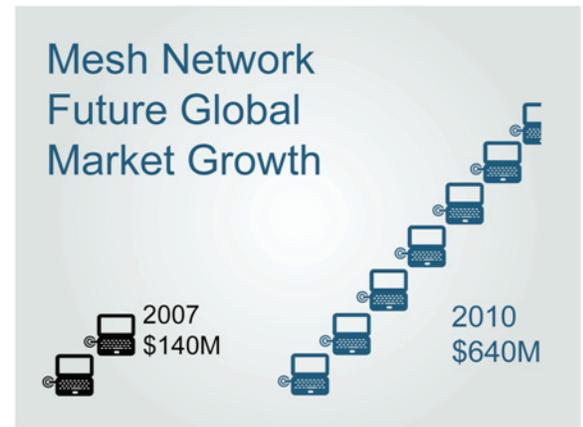
According to a Yankee Group report, the global WiFi mesh market will grow from just more than $140 million in 2006 to roughly $640 million by 2010. (January 2007)

Empowering Personal Broadband Revolution

Wi4 Mesh is part of Motorola's MOTOwi4™ comprehensive portfolio of wireless broadband solutions and services that deliver and extend coverage. With this unique portfolio comes an innovative end-to-end solution. Delivering IP coverage to virtually all spaces, MOTOwi4 also includes fixed, WiMAX, and indoor solutions for private and public networks. All of the MOTOwi4 solutions complement each other and can be deployed to meet the specific requirements for public and private networks.

For more information on MOTOwi4 solutions, visit www.motorola.com/motowi4

MOTOROLA

Motorola, Inc.   www.motorola.com/motowi4