



## Omnitek Gigabit Wireless Backbone

*Omnitek launches the world's first gigabit wireless backbone in Istanbul using SONABeam optical wireless technology from fSONA*

In September 2003, the world's first gigabit wireless backbone was completed in Istanbul, Turkey. The OmniLink backbone was constructed by Omnitek, a systems integrator that has been providing innovative communications solutions to business and residential customers in Turkey since 1986. Founded by General Manager Mr. Muammer Uysal, Omnitek is a forward thinking company that believes in exploring new networking solutions in order to better serve their growing customer base.

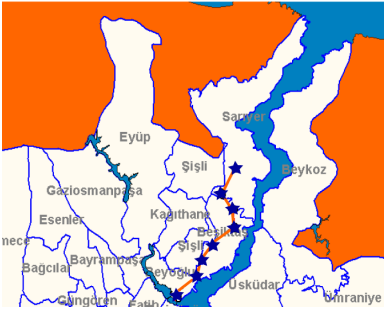
Omnitek's commitment to providing the best communications options to customers in their region led them to explore Free Space Optical (FSO) wireless. In the past four years, Omnitek established over 65 different customer applications utilizing optical wireless technology. During that time, Omnitek gained confidence and proficiency in the technology and came to appreciate its reliability and flexibility. Delivering reliable high-bandwidth connections quickly and cost-effectively earned Omnitek a solid reputation as a company capable of using the latest technologies to provide first-class communications. After perfecting delivery of enterprise connections, Omnitek was ready to move up to the level of service provider. Omnitek's experience with optical wireless led them to realize that these systems were ideal for building a competitive wireless backbone from which they could deliver a suite of high-speed services.

At the time when Omnitek began planning their wireless backbone, telecommunications deregulation in Turkey was about a year off. Omnitek carefully researched how they could capture a share of Turkey's burgeoning communications market. Their research revealed that Istanbul's business customers were greatly underserved and restricted to very expensive and sometimes impossible to acquire, high-speed data connections from the incumbent, Turk Telecom. Omnitek knew that with optical wireless they would be able to deliver high-speed services that were competitive with Turk Telecom in terms of quality, availability and cost.

Omnitek strategically selected the Maslak-Eminönü route in Istanbul as the location for phase one of their wireless backbone project. Although this bustling area is the center of business for Istanbul, the existing Turk Telecom infrastructure is not sufficient to respond to the growing demands of Istanbul's corporate customers. This gap between supply and demand aligned perfectly with Omnitek's competitive backbone strategy.

From their optical wireless backbone, Omnitek would be able to offer lower monthly fees to current Turk Telecom customers. As in many parts of the world, corporate connections in Turkey are still extremely expensive - a 128 Kbps connection costs around \$220 USD per month, 1 Mbps around \$500 USD per month, 34 Mbps (E3) around \$7,000 USD per month and a 155 Mbps (OC-3/STM-1) over \$18,000 USD per month. In addition to the monthly fees, corporate customers must provide and pay for all related connection and equipment to establish the link. Once the connection is established, the assets must be turned over to Turk Telecom who then use the equipment to offer service to other customers. Omnitek's competitive service would offer substantially lower monthly fees and no start-up costs.

To ensure the best quality of service and customer retention, Deputy General Manager, Mr. Murat Akay insisted that only the best performing carrier grade equipment be utilized in Omnitek's high-speed wireless backbone. "Optical wireless gave us the ability to set up a backbone very quickly and cost-effectively which meant we were able to present a compelling return on investment strategy to our investors and very attractive service rates to our customers," stated Akay. "However, without a reliable network none of those benefits would be realized."



Despite his experience dealing with various free-space optical wireless vendors, Akay painstakingly researched advances made in optical wireless technology. Adopting a clean sheet approach, he concluded that reliable gigabit speed operation was necessary to provide the level of service required by corporate and service provider customers. The features he deemed essential for reliable service were full manageability of the equipment, multiple redundant transmitters, eye-safe 1550nm wavelength and excellent product stability. "In addition to fulfilling all of my predetermined requirements for an optical wireless system, my main reason for selecting fSONA equipment for Omnitek's wireless backbone was their global reputation for being much more than a free space optics vendor. They had a demonstrated track record building world-class wireless networks on a global scale," commented Akay.

Omnitek selected eight buildings along the Maslak-Eminönü route that would make the best nodes for the wireless backbone network. The buildings were each between 1.2 and 2.3 kilometers apart for a total coverage of about 13 kilometers. In addition to being suitable node locations, each of the buildings housed a number of potential corporate customers and some of them would end up housing Omnitek's Network Operating Centers (NOC). The SONAbeam gigabit wireless systems were delivered to Omnitek in July of 2003 and by September of the same year the network was built, commissioned and running customer traffic. From their backbone network, Omnitek can also reach customers in nearby buildings by deploying optical wireless spurs.

From the backbone Omnitek now offers a number of services to business and service provider customers. For corporate customers, Omnitek offers LAN-to-LAN and Internet connectivity at Ethernet (10baseT) and Fast Ethernet (100baseT) speeds. LAN-to-LAN connections utilize the VLAN protocol to connect corporate offices that are located in multiple buildings along the route. Corporate customers can also use the backbone network to connect with their Internet Service Provider (ISP). In addition to traditional telecom services, Omnitek will also be able to offer advanced services such as voice over IP, streaming media or video teleconferencing.

In addition to corporate customers, Omnitek's backbone has also become popular with the Internet Service Providers (ISP). Omnitek's wireless backbone is located in such an active area that the ISP's all have a number of Points of Presence (POP) along the route and need to relay traffic from POP to POP. Before Omnitek's backbone was in place, the ISP's had to buy their connections from Turk Telecom - at a very high cost. Omnitek's greater capacity has opened up a whole new dimension of service offerings for local ISP customers and has reduced operating expenditures to a fraction of what they were once were.

Although recent deregulation ensures a number of players are expected to emerge on the Turkish telecommunications scene over the next few months, Omnitek's foresight and preparation has put them first to market, and in a prime position for success. Omnitek has plans to replicate their success in Istanbul to other areas within Turkey, such as Izmir and the Capital City Ankara as well as to other countries in the region who want to create a digital advantage for their industries and citizens.

"The Maslak-Eminönü backbone has raised the bar in the optical transmission industry. For many years the bandwidth capacity of free space optical solutions has been in excess of most wireless application requirements but the tide has turned, users are now demanding higher-speed service," declared Carl Cagliarini, Director of Business Development for fSONA EMEA. "Omnitek's flagship network is a clear ratification that when utilized to specification FSO technology is a key delivery tool for metropolitan and urban carrier-grade networks."

The Omnitek gigabit wireless backbone network joins the other 20,000 plus free space optic solutions employed throughout the world today in applications that range from disaster recovery solutions to meshed networks carrying millions of GSM calls every day, from enterprise LAN-LAN solutions to primary transmission equipment in carrier backhaul, from backhauling Wi-Fi hotspots to metropolitan private line replacement.

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