



wavecom

communications engineering



Case Study



Municipality of Águeda

Implementation of a WiMAX infrastructure

Wavecom, a Portuguese communications engineering company, has successfully implemented in the Municipality of Águeda the first WiMAX project in Portugal.

Being tested in our country for some years, WiMAX allows a speed transmission of voice and data three times higher than that of third generation mobile networks with lower broadband infrastructure costs.



Case Study

Municipality of Águeda



Its mission is to manage the city of Águeda and promote the development of the entire municipality in its various socio-economic, educational and cultural aspects.

The municipality of Águeda belongs to the Aveiro district and has a total area of 335km², composed of 20 parishes, where approximately 50,000 people live.

Filled with a variety of landscapes, from the urban structure to the landscape of mountain villages, passing through areas of alluvium and various towns, the municipality is economically characterized by having a cluster of traditional metal and mechanical industries and a vast network of companies that stand out in the domestic and international markets, in the areas of lighting, electronics and ceramics.

Background

“The Municipality of Águeda supported the implementation of a WiMAX network infrastructure, aiming to develop the Information Society in the municipality...”

The Municipality of Águeda supported the implementation of a WiMAX network infrastructure, aiming to develop the Information Society in the municipality, allowing Internet access in public Wi-Fi hotspots, and also to create the possibility of setting up the communication infrastructure enabling centralized applications in areas such as:

- Control of street lighting, in association with local businesses, in order to enhance the creation of new products that can benefit the competitiveness of companies in the region;
- Announcement of the reporting and filming teams for the coverage of TV events in real time, initiative Águeda TV (web streaming);
- Remote metering;
- Interconnection of municipal buildings.

The project in numbers

In phase 1, a WiMAX base station was implemented at the top of the buildings of the Town Hall, to provide network coverage in a radius of approximately 1km.

In addition to this, a set of six guests similar to an “USB pen”, compatible with notebooks, was made available to access at any location within the footprint of the cell. It was also installed a fixed client in the building of the Sports Hall of GICA.

This equipment connects to a Wi-Fi access point, connected to a high-gain sector antenna (16dBi and the 120° of Horizontal HPBW), Wi-Fi coverage is provided for the entire waterfront of the city, where social and cultural activities take place, such as concerts, gastronomy fairs, etc..

Phase 2, yet to be developed, includes the implementation of three additional base stations, extending the network coverage area to the north of the city and also to a set of parishes of the municipality.

Based on the coverage and capacity of these two additional base stations, it is possible to create over 7 Wi-Fi hotspots in other locations, which will include a wider, and in the case of mountain villages, a more disadvantaged group of citizens.

The solution

Base Stations AVIAT Starmax and AVIAT Provision Subscriber Manager application for the component for the WiMAX network.

Provision Subscriber Manager Installation on Windows virtual machine, enabled by the Municipality.

Fixed client workstations 3160 AVIAT and client stations similar to USB client from Quanta.

Wi-Fi Equipments:

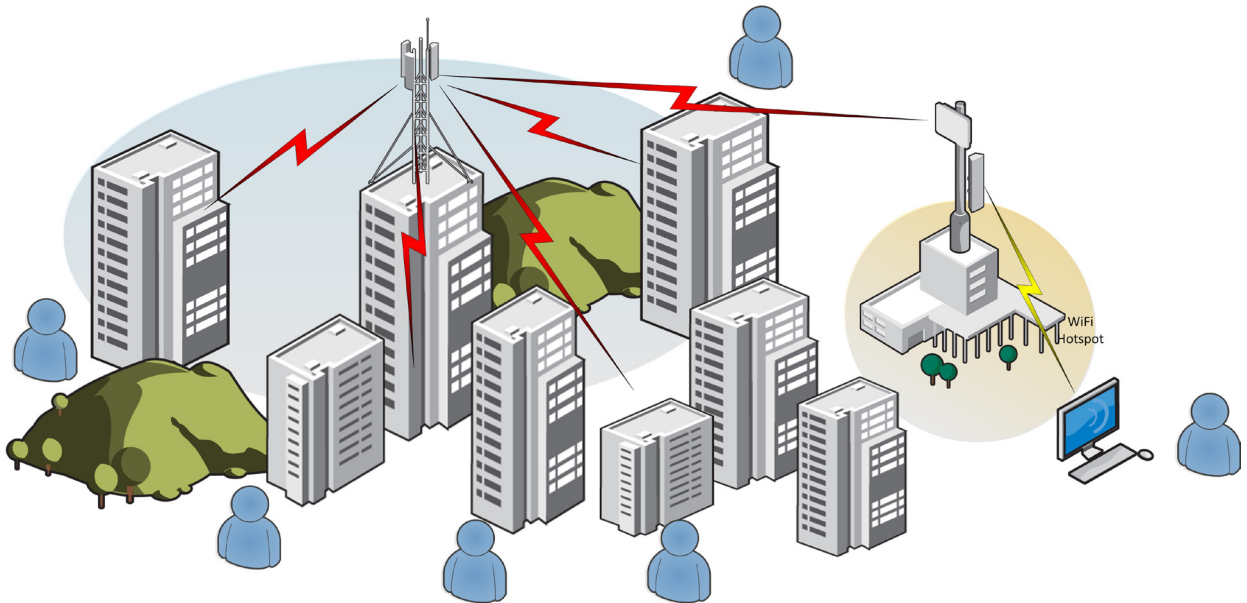
- Access Points: Proxim AP4000;
- Sector Antennas: Wimo 16dBi, 1200.

Main features

The project involves several operational areas with different radio propagation environments, for example, urban areas, with and without line of sight, and uses two different radio technologies: WiMAX and Wi-Fi.

The coverage radius of 1km for users registered with USB underlines the potential of WiMAX in urban environment.

The main features of this project are the high coverage of the Wi-Fi hotspot, the perfect interconnection to the gateway and the centralized registration of the hotspot users in the Municipality of Águeda.



Associated Services

- Internet access via public Wi-Fi hotspot in the waterfront of Águeda;
- Broadcasting of video signal of the filming teams to the local server, allowing the transmission on the Internet using web streaming;
- Communications from the town hall employees transmitted to the internal LAN and to the Internet.

Project evaluation

- Why Wavecom? Radio expertise.
- Benefits of the project: New WiMAX technology (cost/return/additional services)
- Future projects: network expansion to cover the municipality areas.

Client Testimonial

The current Municipal Executive Board knew of WiMAX at a meeting in Brussels, where this technology was presented as a solution to constraints similar to the ones in Águeda, being significantly cheaper and a reference in several countries.

To the mayor of Águeda, this project to create a WiMAX network to benefit residents and visitors was meant not only to fight the digital exclusion and bring citizens closer to web services developed by the Town Hall, but also to become a dynamic instrument for public spaces included in the City Urban Regeneration.

In this sense, Gil Nadais ensures that “Águeda is now emerging as a smart city, to the extent that partnerships are being developed in a logic of Triple Helix in order to consider the territory in an intelligent way, where information technology and communication are placed at the service of governance, mobility, economy and environment, providing a better quality of life for residents.”



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About Wavecom:

Wavecom was established in 2000 and has three core fields of activity: Wireless Networks and Networking, Unified Communications and R&D. Our core business consists of the development and integration of telecommunications solutions, specialized in Radio and Unified Communications technologies. The company started its activity as a telecommunications integrator specialized in Wireless, expanding then its activity to the Unified Communications field. In Portugal, the company has 29 employees. It is also present in Cape Verde and Brazil. Wavecom is the market leader for wireless connections in unlicensed band and has developed the major VoIP project (Open Source) in Europe.

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