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# Affordable Broadband for All in Argyroupolis, Greece

## Customer Highlights
### Challenges

- Expensive, poor-quality Internet connectivity contributed to digital divide

- Many neighborhoods had no broadband service available

### Solution

- Low-cost, fee-based wireless broadband service established by city's development agency

### Results

- First metro-scale Wi-Fi network in Greece

- Affordable broadband Internet will cover 90 percent of city by September 2008

- Payback for network investment expected in 2.5 years

### Systems and Services

- Tropos Networks MetroMesh 5320 routers

- Architecture, installation, and maintenance from Simple Waves Innovations and Digital Sima

Argyroupolis (Αργυρούπολη/ις), which means "silver city," is one of many suburbs that surround Athens, the capital of Greece. An inviting place to live, with a strong sense of civic pride, Argyroupolis is home to approximately 40,000 residents. The city sees widely-available and affordable broadband services as a way to help in the education and welfare of all citizens, and provide a new "window to the world." However, city officials were concerned that existing telecommunication providers offered services that were too slow, unrealiable, or expensive – they were not satisfying the broadband needs required by the city and its citizens.

## THE CHALLENGE

The entire country of Greece is struggling to bridge the digital divide and increase the penetration of broadband at the national level – as of late 2007 less than 10 percent of the population had high-speed Internet access. To address this issue, the city of Argyroupolis assigned its municipal development company, DEADA, to explore the potential of using wireless broadband to bring high-speed connectivity to its citizens. Their initial task was to prove the economic and technical feasibility and determine how well a wireless network would be accepted.

## RESULTS

After receiving EETT (National Telecommunications and Post Regulatory Commission) approval, DEADA formed ArNet.gr, which quickly put a pilot project in place. ArNet.gr installed a wireless mesh covering over 15 percent of the city, using Tropos MetroMesh routers to deliver broadband connectivity to homes and businesses. Fees for the pilot phase were set at 60 euro annually for unrestricted access, and citizen reaction was encouraging.

In early 2008, the final phase of development was started. As the first municipal Wi-Fi network in Greece ArNet.gr is now building out this network so that all residents can enjoy affordable broadband Internet access, even as they move about the city. ArNet.gr expects to complete the network by September 2008, with coverage over 90 percent of the geographic area. Service fees range from 60 - 200 euro per year – well under 20 euros a month – depending on connection speed. Fees have been set to cover the cost of the network and operation, and payback is projected in two and one-half years.

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"The quality of the Tropos hardware and the high demand for wireless network services by the local community was obvious after the completion of the one-year pilot phase in 2007. The input was very encouraging and it confirmed the ArNet.gr business plan. In the years to come Argyroupolis will be a leading Greek city offering state-of-the-art services which bridge the digital divide, creating opportunities for new business in a new era."

Mr. Stefanos Paschalides MBA
General Director
Municipal Development Company of Argyroupolis (DEADA)

## TROPOS SOLUTION

Tropos 5320 MetroMesh wireless routers provide broadband coverage throughout the city. Simple Waves Innovations, a leading network integrator in Greece, designed and installed the city-wide Wi-Fi network along with Digital Sima, a leading networking and security company. The entire wireless system is buily on standards-based 802.11 Wi-Fi, enabling connectivity at up to 4 Megabits per second from virtually any ICT device. The Tropos wireless routers were installed on municipally-owned street lamps by city workers. Tropos routers automatically adapt and adjust to network and environmental conditions, providing optimal throughput without manual adjustment.

## FUTURE APPLICATIONS

ArNet.gr was designed and implemented for low-cost expansion and upgradeability. Since its creation, ArNet.gr has added new services, such as web hosting and advertising services through a network of TV screens placed at public places throughout the city. As ArNet.gr builds out the next phase, new consumer and municipal services are being considered, and public safety applications are in the planning stages.



- Video security - Bordered on the north by a large forest, fire is a real danger for Argyroupolis. The dry warm climate subjects the canyons and hillsides to fires that can spread and destroy nearby homes. Video surveillance cameras, connected over Wi-Fi, can effectively monitor the forest and alert officials before a fire spreads to the city.

- Digital inclusion - ArNet.gr is expected to participate in an EU digital inclusion initiative – e-Inclusion. The ArNet.gr 4u program is aimed at the social integration of vulnerable groups, such as older people and people with disabilities. Training and equipment will be provided to the city's three Elderly Clubs and two schools for people with hearing disabilities with the goal of expanding their world.



- Voice over IP - Voice over IP (VoIP) calling capability is being evaluated for cost-savings and extended telephony features.

- Traffic - The city is evaluating how the network can be used to improve traffic flow and reduce commute times using intelligent traffic systems.

- Advertising - In late 2007, ArNet.gr tested an advertising service, using the wireless broadband network to transmit business ads and community information to three plasma screens placed throughout the city. This successful service is being built out to include 15 screens by the Fall of 2008.