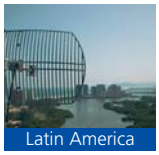

City of Geneva


North America


Central America


Latin America


Western Europe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Southern Africa


Offshore

City of Geneva, NY, USA

alvarion®
Your Open WiMAX Choice

Fixed and Mobile Network for Offices, Schools and Public Safety

Today the City of Geneva boasts a wireless infrastructure that is second to none and far exceeds the capabilities of many other municipal and private sector networks. Providing broadband voice and data to government buildings as well as police vehicles throughout the city.

About the City of Geneva

- Situated in the heart of New York State, 300 miles north of Manhattan with 14,000 residents

The Challenge

- Harness the capabilities of wireless broadband and use it to decrease the cost of government-related communications
- Expand the network as wireless technology evolved
- Build a network capable of serving police vehicles out on patrol

The Solution

- Alvarion is the sole equipment provider for the City of Geneva's extensive wireless broadband network

The Result

- A network that can support concurrent or individual use of 900 MHz, 2.4 GHz, 4.9 GHz and 5 GHz bands
- City now owns their own broadband network
- Voice (T1 replacement with VoIP) and data provided to a variety of government organizations
- Mobile data network for police force
- Video surveillance network for security and traffic control

The Partner

Integrated Systems is an Alvarion AIRpartner in New York State providing Consulting, Engineering Services, System Integration, Voice, Video and Data Network Design, Implementation and Support in mixed wired and wireless environments for County, Local Governments, Public Safety and Emergency Responders. www.integratednet.com

www.geneva.ny.us

Starting with 2.4 GHz

The City of Geneva started with broadband wireless in 1999 using a single unlicensed 2.4 GHz point-to-point connection between the waste water department's building and City Hall. Built using Alvarion's BreezeACCESS system, the connection provided 3 Mbps and proved to be a reliable and economical means of providing broadband interconnectivity between buildings.

2.4 GHz connections were added gradually to connect public safety and water filtration operations to City Hall to support data sharing, inter-office mail, internet sharing, supervisory control and data acquisition, as well as monitoring applications for the waste water department, water filtration and local reservoir.

In almost all cases, base stations were positioned discreetly on existing government structures such as radio towers, water towers and city buildings to minimize the cost of erecting new towers.

Moving to 4.9 GHz & 5.8 GHz

As more robust frequencies and radio technology evolved, additional broadband wireless links were added and designs were made to support a point-to-multipoint network using 5.8 GHz. Today, Alvarion BreezeACCESS VL base stations are located throughout the city providing voice and data services to City Hall, schools, the police department, fire stations, the highway department, waste water and compost plants, the fresh water reservoir and even the local ice rink and leisure center. BreezeACCESS VL's OFDM technology means that the network can reach buildings in both urban and foliage-dense operating environments without direct line-of-sight to a base station.

When the 4.9 GHz spectrum was licensed by the government for municipal use, city officials realized that it could be used as a backbone for certain public safety applications. Today this network is used for backhaul to redistribution points at 54 Mbps.

Customer type: Municipality - schools, government offices and police force

Country / Region: USA / North America

Solution: BreezeACCESS® VL and BreezeACCESS® 900

Application: Fixed and mobile voice and data

"Time and again Alvarion's equipment and people have surpassed our expectations. As the sole provider of equipment for our wireless network, Alvarion has played a crucial role in reducing our municipal telecom bill by tens of thousands of dollars every year while increasing our work efficiency through carrier class broadband services throughout the city."

Gordon Eddington, Director of the City of Geneva's Telecom Department

Mobile Broadband

After providing broadband to the police department buildings, city officials recognized that extending that network to police officers while on patrol would greatly increase their effectiveness in fighting crime. They decided to provide real-time, high-speed connectivity to the seven police vehicles in the city enabling officers to send and receive data messages, still images and full-motion video using mobile data terminals.

In each police car, the mobile data terminal (or in-car computer) is connected to a BreezeACCESS 900 mobile subscriber unit (SU-M) located in the trunk of the car. The SU-M is powered by the car battery and connects to the nearest BreezeACCESS VL base station at any time. When the police car is moving, data transmission continues uninterrupted as the signal is transferred seamlessly from one base station to another.

Operating at 3 Mbps, or the equivalent of a single bi-directional T1 per car, the network enables officers to access police databases to download mugshots, criminal records or other critical information on suspects.

The network also provides voice capabilities in the event of an emergency. In the future, the network capabilities could be expanded to provide IP video recording and remote surveillance capabilities from each police vehicle.

Introducing VoIP Services

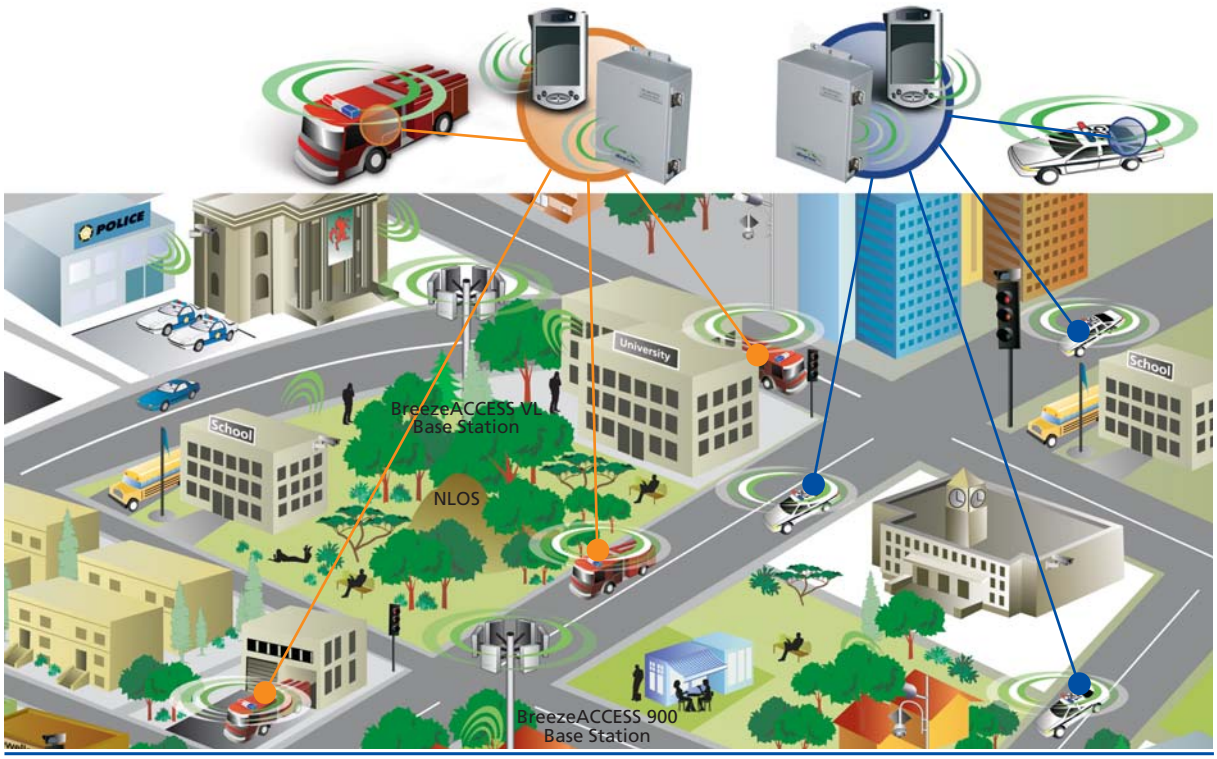
In 2004, as additional bandwidth on the network became available, VoIP services were introduced enabling the broadband wireless network to replace 130 telephone lines citywide resulting in further cost savings. Voice packets having priority over data to ensure good call quality. Today the VoIP network is used by 15 different city buildings including several police offices with excellent results. For example, one particular VoIP PBX now supports approximately 18,000 calls per month.

Video Support

Video is supported on all the broadband wireless networks in the City of Geneva and is used for traffic control as well as recording and monitoring behaviour in hard to patrol areas in support of the city police.

The Result

Using Alvarion's single network management system for all its networks along with sharing deployment infrastructure – towers, masts, city properties, the City of Geneva has shown how a city can be in control of its broadband destiny.



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