



CASE STUDY

Polish Municipal Government Leverages LightPointe Optical Wireless Solution to Extend Network & Preserve Historic Town District

Window-to-Window Fast Ethernet Connectivity

The government Municipality of Nowy Sacz encompasses a picturesque, historic township in the heart of the Beskid Sadecki Mountain range in southern Poland. Known to many as the “Polish Tuscany,” Nowy Sacz is home to more than 80,000 residents and 10,000 businesses. Officially chartered by King Wencelaus II more than seven centuries ago years ago, Nowy Sacz today is a thriving township, and well-known for one of the largest historic market squares in all of Europe.

The municipality’s information technology (IT) team has built a solid and secure technology foundation to support the township’s offices of development, fiscal services and community services. To that end, the IT team designed a robust Fast Ethernet local area network (LAN) to provide high-speed data connectivity for about 250 municipal employees while ensuring reliable and secure access to mission-critical databases and archives. The LAN links several offices located near the town’s celebrated market square and is connected to a centrally managed Wide Area Network (WAN). This network structure optimizes data flow between central data systems and the municipal offices, allowing city staffers to easily access and respond to citizens’ needs.

“Optical wireless provided us with a true Fast Ethernet solution that met all our criteria,”

Jacek Wojtowicz | Nowy Sacz
IT Director

In September 2004 the city’s elected town council decided to relocate some of the Nowy Sacz offices from the Town Hall to an adjacent building to accommodate employee and services expansion. Yet even as plans were drawn and renovation was started, one nagging question remained: how to physically extend the LAN between both locations—a total distance of some 60 meters across a street—at optical speeds in a city center that lacks fiber-optic cabling.

THE CHALLENGE:

Countrywide, Poland’s deployment of fiber-optic cable is limited to larger cities primarily due to the costs and provisioning requirements for fiber deployments, as well as a general reluctance to dig up historical streets and disrupt busy market squares, the focal point of everyday Polish life. The expense and limited availability of fiber has created a situation in Poland in which both private Enterprises and small Internet Service Providers (ISPs) rely heavily on low-frequency, license-free wireless Radio Frequency (RF) technology for connectivity and networking needs. This, however, has created its own set of issues, including severe overcrowding of microwave signals that can cause significant interference and unstable data transmission between locations for wireless connectivity products.



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In exploring RF alternatives, the Nowy Sacz IT team immediately became concerned about performance and security. Because many local companies already were using RF, the municipality was worried about interference and the risk network intrusion and interception of highly-sensitive information. Additionally, they felt that half-duplex RF transmission speeds would not be enough to support the sharing of data-intensive applications and databases between the two municipal locations needing connectivity.

The town could not justify the costs or licensing challenges to deploy a high-bandwidth licensed microwave solution for such a short distance of 60 meters. In addition, tearing up the township's historical center to lay fiber was out of the question. One viable option emerged: Optical Wireless.

Optical Wireless products are superior to low frequency microwave solutions when comparing throughput and immunity to interference. Another advantage for Optical Wireless is security. License-free worldwide, Optical Wireless utilizes beams of light in a point-to-point configuration to transmit and receive data, voice and video communications. Since these beams are narrow in comparison to RF and precisely aligned with one another, interference and wayward data transmission is eliminated. According to Jacek Wójtowicz, Nowy Sacz's IT Director, the primary selling point of Optical Wireless was its ability to address the municipality's security concerns and bandwidth requirements. "Optical wireless provided us with a true Fast Ethernet solution that met all our criteria," explains Wójtowicz. "Beams of light are narrow and invisible to the naked eye, making them hard to find and even harder to intercept and crack."

Less than three weeks before the scheduled opening of the new municipal offices, Wójtowicz enlisted the help of SKK, one of Poland's largest value-added resellers and a leading expert in Optical Wireless solutions, to evaluate the project and assist in deploying a high-speed networking solution. Bartłomiej Madej, a project manager with SKK, recalls that Nowy Sacz officials specifically requested an Optical Wireless solution. "Optical wireless was not only the best possible technology solution but it was the only solution that could be deployed in a matter of hours," explains Madej. "This was especially important since they needed to occupy the new offices within a few short weeks."

THE SOLUTION:

Nowy Sacz officials evaluated Optical Wireless products from several vendors but ultimately chose a solution from LightPointe based on the company's track record, overall product quality, performance and technological superiority.

Nowy Sacz officials selected the LightPointe FlightLite™ 100 to provide full-duplex, point-to-point connectivity. The link delivers 100 Mbps data throughput between the two buildings and weighs only 4.5 kilograms (9.9 pounds). To add an extra layer of security to the network implementation, SKK recommended a window-to-window installation, whereby all equipment is enclosed inside the two buildings using window-mount devices. The entire installation took less than three hours, with the team easily achieving connectivity through double-glass windows.



FlightLite 100 in Nowy Sacz facility



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THE BENEFITS:

Just a week before the new municipal offices were to be occupied, LightPointe's FlightLite 100 was up and running with no glitches, lost packets or transmission interference, despite the blustery weather conditions common for the region. On the first day that Nowy Sacz employees occupied the new building they had full and speedy access to the town's network. Integration with the main database and municipal archives was seamless. Files were delivered to and from the file and print servers in seconds, and the Fast Ethernet connection effortlessly supported the municipality's Intranet, email and Internet applications. It was as if the remote office was physically connected to the central system via fiber-optic cable.

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Bartłomiej Madej | SKK
Project Manager

As a secure, cost-effective, one-time investment, LightPointe's FlightLite system has exceeded the municipality's expectations. More importantly, the system has performed perfectly since day one. "We had less than a month to specify, install, test and deploy a technology solution that would provide a reliable, robust and secure connection to our existing LAN network," explains Wójtowicz. "We were convinced that the quality and durability of FlightLite products exceed that of the competition, and expect a return on our investment in roughly 13 months. We undoubtedly made the right choice in LightPointe."

An added benefit of the LightPointe solution is its flexibility in expanding and enhancing the network applications supported. While the Optical Wireless link is currently used exclusively for data transfer, the municipality is considering expanding the solution to include voice connectivity in the future.



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CUSTOMER:

Municipality of Nowy Sacz in Poland (www.nowysacz.pl)

INDUSTRY:

Government

RESELLER:

SKK, a leading Value Added Reseller providing comprehensive networking and identification-technology solutions throughout Poland, with specialized expertise in Optical Wireless (www.skk.com.pl)

CHALLENGES:

- Need to extend a 100 Mbps network across an historical market square connecting the Town Hall with an adjacent building 60 meters away
- Find an outdoor wireless solution that would not be impacted by congested RF airwaves.
- Protect confidential government data
- Identify and install solution in a matter of weeks
- Install a solution that would provide return on investment in less than 2 years

SOLUTION:

- LightPointe's FlightLite 100: an Optical Wireless solution weighing just 4.5 kilograms (9.9 pounds) offering full line speed Fast Ethernet connectivity and seamless integration within existing networks. The FlightLite, available in a variety of bandwidth and distance configurations, is the most commonly deployed Optical Wireless solution among IT professionals worldwide.

BENEFITS:

- High-speed Optical Wireless bridge delivered 100Mbps connectivity, allowing ample bandwidth to support the town's data network
- Security benefits offered by point-to-point Optical Wireless connection satisfied the client's need to protect sensitive data
- Best-in-class quality and robustness
- Optical Wireless is fully scalable and can be leveraged to support voice applications as the need arises
- Ease of installation and trouble-free operation guaranteed the robust network would be operational in time for relocation of employees to new building