



Løvenskiold-Fossum Selects Motorola Wireless Solution for Remote Management of Hydro-Electric Dams



LØVENSKIOLD
FOSSUM HOVEDGÅRD



Fixed Wireless Broadband Technology Provides Powerful Platform

A high-bandwidth wireless network capable of delivering data-intensive applications such as video surveillance has resulted in Løvenskiold-Fossum - a leading Norwegian corporation with interests in hydro-electric schemes, commerce, real estate, forestry and agriculture - implementing Motorola's Point-to-Point (PTP) and Point-to-Multipoint (PMP) fixed wireless broadband technology.

Controlled from its operations centre based in the city of Skien, the Løvenskiold-Fossum network provides secure broadband connectivity to extensive hydro-electric operations across the Telemark region on the east coast of Norway. The network has enhanced on-site security and bolstered productivity through improved remote monitoring and management. It has also enabled the organisation to deliver additional applications and broadband services to other group companies, commercial businesses and the general public - the likes of Internet access, off-site backups and VoIP.

Network Performance, Reliability and Security Required for Critical Applications

The company had a pressing need for a remotely controlled, video-based surveillance and water monitoring system for some 12 dams and hydro-electric power plants. Earlier attempts using cable-based leased lines to a number of sites were undertaken but these were generally unreliable and unable to deliver the requisite throughput. A number of sites were also subject to regular periods of downtime which meant personnel had to revert to manual operations.

As a result of the lack of suitable communications infrastructure in the area, Løvenskiold-Fossum decided to implement its own network starting out with the formation of a dedicated group company, Z-Nett whose mandate was the development and management of a wireless network for the entire group and spin-off commercial developments. After evaluating numerous wireless solutions with little success, the company was introduced to Motorola's fixed wireless broadband technology through accredited distributor in Norway, Data Equipment.

Company
Løvenskiold-Fossum

Technology Partner
Data Equipment (Norway)

Industry Name
Utility (hydro-electric schemes, commerce, real estate, forestry and agriculture)

Product Name

- PTP 600, 500 & 300 series
- PMP 400 series
- One Point Wireless Suite

Solution Features

- Secure, high-throughput connectivity
- Long-range communication
- Sophisticated interference mitigation
- Robust and high availability

“Due to the critical nature of the many processes of our organisation, it is absolutely vital that we have real-time access to data and ability to remotely monitor. The fixed wireless broadband network gives us that control, is highly reliable and secure and has the scalability to accommodate future developments.”

Leopold Løvenskiold, CEO and owner

Delivering Bandwidth-Intensive Applications with Robust Fixed Wireless Broadband Solution

Motorola's Point-to-Point and Point-to-Multipoint solutions provide Norwegian Organisation with powerful communications platform for delivery of video surveillance and water monitoring applications and remote management across extensive hydro-electric power and company operations network.

PTP and PMP Systems Reliable & Secure

Løvenskiold-Fossum's network is developed around a central antenna hub site located on a tower in the Skrehelle area which routes remote site IP-based and video traffic via a PTP 600 series system to and from the control centre in Skien. The individual network links to the remote sites are a mix of PTP 300, 500 & 600 network bridges and extensions and PMP 400 systems configured to meet the specific user bandwidth requirements.

With average speeds of around 100 mbps and maximum reliability even under the harshest conditions, the network is underpinned by Orthogonal Frequency Division Multiplexing (OFDM), a cost-effective, powerful technology that allows for the establishment of highly reliable and secure wireless links for bandwidth-intensive applications in Line-of-Sight (LoS), near-LoS and Non-LoS environments. This is particularly important in Løvenskiold-Fossum's case as the wireless network has to connect numerous sites across diverse geographical terrain presenting significant obstruction challenges.

In addition to improving the quality of data delivery and effectively mitigating interference through a unique and powerful modulation scheme, the network provides multiple layers of security, including over-the-air DES (Data Encryption Standard) and highest-grade security, AES (Advanced Encryption Standard) 128-bit encryption, ensuring secure data delivery and exceptional reliability.

A module in Motorola's One Point Wireless Suite of software tools is used, which simplifies and improves wireless network management by integrating traditional element management with bandwidth and authentication management in a single-server platform. The resultant network is a highly reliable and scaleable backbone infrastructure for transporting Løvenskiold-Fossum's bandwidth-intensive video surveillance and other broadband-dependent IP traffic.

Remote Access to Regional Operations Boost Productivity

Motorola's PTP and PMP solutions were the ideal match for Løvenskiold-Fossum's connectivity problems. Aside from the challenge of finding a suitable site for the central antenna system, the network design (using Motorola's LINKPlanner RF Planning Tool) and equipment deployment was easily implemented as there was no need for labour-intensive digging and trenching.

With all sites online, personnel have the ability to get an overall real-time view of the organisation's entire operations from the control centre. The network also provides an ideal interference-resistant platform for downloading vital data, conducting software upgrades, running diagnostics and remote site monitoring and maintenance.

The network technology allows for excellent scalability, which is an important factor for expanding business operations. This includes new housing developments being built around these operations which also require access to cost-effective voice and data services.

Overall, the network has reduced risk and has realised significant cost savings due to better control, enhanced functionality and lower operational, installation, maintenance and repair costs – contributing towards a fast ROI and increased revenues.

Currently, Z-Nett is looking at other complementary wireless solutions from Motorola; the likes of Mesh and WiFi technologies that integrate easily with the existing networking infrastructure and deliver an extended seamless service for both the organisation and general public.



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