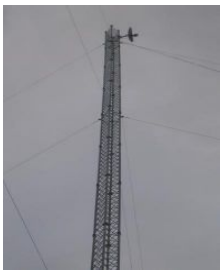
Motorola Fixed Wireless Broadband Integral to Latvian Libraries Network



Rural Digital Divide Bridged with Reliable, High-Bandwidth Solution for Internet Access

The Latvian state agency for culture and information systems, Kultūras Informācijas Sistēmas, is using Motorola's point-to-point (PTP) and point-to-multipoint (PMP) fixed wireless broadband technology to provide public internet access to outlying towns and villages across the country.

This broad-scale initiative forms part of a national library communication network developed and co-financed by the Bill and Melinda Gates Foundation and the Latvian Ministry of Culture in conjunction with local municipalities. The aim is to provide computers and internet access at every library across the country which involves 26 counties, 56 cities and over 500 local authorities.

Since its inception in late 2006, all of Latvia's 874 municipal public libraries have now been connected to the broadband-speed network, allowing users to access the internet from some 4000 networked computers and WiFi hotspots installed at the libraries. The network was implemented by a consortium of local companies which included local Motorola distributor, Stream Networks and Telecentr Latvia which was responsible for the installation and commissioning.

Backhaul Links Needed for Remote Site Integration

Latvia had a relatively low broadband penetration which resulted in more than 50 percent of libraries in remote villages and towns having no internet connection at all. This digital divide between cities and rural areas demanded an investigation into a suitable networking technology which would not only offer the requisite bandwidth and throughput, but which was also reasonably priced, robust, highly reliable and easy to install - the use of traditional router-based dedicated links being far too expensive to deploy on such a large scale.

Motorola's PTP and PMP 400 series fixed wireless broadband technology was chosen as the major solution for rural regions with the main selection criteria being cost-effectiveness, good scalability, high reliability and ease of deployment.

Company
Latvian State Library Network

Technology Partner
Stream Networks
Telecentrs Latvia

Industry Name
ISP, Education

Product Name
PTP and PMP 400 (5.4GHz) series

Solution Features
- Small footprint, easy to install
- Secure, high-throughput connectivity
- Long-range communication
- Sophisticated interference mitigation
- Robust and high availability

”International financial support has helped us bridge the digital divide by using modern technologies to deliver digital services. This has seen libraries become the cultural and social centres for people in rural areas.”

Armands Magone, director at the agency, Culture Information Systems

Rural Communities Get Connected with Powerful Wireless Technology

The deepening technological chasm between metropolitan and rural Latvia, has now been resolved following the deployment of Motorola’s fixed wireless broadband solutions.

PTP and PMP Provide Robust Connectivity

The Latvian library network is an IP-based VPN operating on three internet service providers’ (ISP) interconnected backbone infrastructures. Each library connects to this infrastructure via a 2, 4 or 10 Mbps wide area network connection with local access provided via a fixed local area network or a WiFi hotspot.

To ensure continuity and optimal uptime, there are duplicated data centres linked via backbone internet connections. Each ISP is responsible for the control and management of its network infrastructure while a firewall and overall problem management is undertaken by a single operator. There is also a centralised call centre for customer support which forwards identified problems to the respective ISP for resolution.

Motorola’s PTP 400 series fixed wireless broadband equipment is used to provide the backhaul links which connect the remote areas to the ISP infrastructure. With a range of up to 35 miles (56 kilometres) and a typical aggregate throughput of 14 Mbps, the PTP 400 series offers a line-of-sight (LOS) range of up to 124 miles (200 kilometres) with maximum availability. It provides exceptional link reliability and performance and significantly reduces interference in noisy RF conditions, near line of sight (nLoS) and non line of sight (NLoS) environments.

The PMP 400 solution is used for wirelessly connecting multiple remote sites to the network. In some cases it has also involved extending a remote PMP site by either a Motorola PTP backhaul network link or via another vendor’s wireless solution, depending on the frequency specification/restrictions in certain areas, the distances involved or the network capacity. PMP’s unique and powerful modulation scheme significantly improves the quality of data delivery and effectively mitigates interference from other systems of virtually every shape and spectrum.

Flexible Solution Easily Installed

The Motorola PTP and PMP fixed wireless broadband solutions proved to be highly flexible and easily configurable which was ideal for the varied requirements of the library network. The equipment has a small footprint and with the power over Ethernet feature, the amount of valuable tower space needed is reduced significantly. The units are also designed to be easily mounted (at a rate of 10-15 installations per week in this case) and adjusted even in the smallest of spaces.

Taking this into account, together with remote link management capabilities for enhanced monitoring and control and improved functionality, the choice of this robust technology should play a vital role in reducing the overall operating costs of this vast network.

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