TRIMAX Inc.

PLCnetworks inc.
LEADING PROVIDER OF POWERLINE COMMUNICATIONS

multi-source inc.
THE ART OF POWERLINE COMMUNICATIONS

Trimax Corporation trades on the Nasdaq OTC:BB market with symbol: TMXO.OB

Broadband over Power line Services

Trimax Corporation is a technology integrator focused on providing low-cost access to high-speed data networks and applications in the 'last mile' service sector via Broadband over Power Line (BPL). Our commercially ready technology can transmit data (internet, voice and video) over existing electrical power lines. The Power line communications (PLC) hardware is integrated with proprietary software which allows customers to manage data carried on a PLC network.

Core Competencies

Trimax Corp. BPL solution is designed for deployment on medium-voltage power lines.Trimax's technology utilizes the pervasive medium-voltage grid to bridge the gap between existing fiber networks and end user demand. By leveraging the existing assets of utilities, Trimax's products can provide a low cost addition to an existing infrastructure to improve the coverage of existing broadband builds.

Enabling the MV grid unlocks the potential of many utility functions and can provide Broadband applications to end users. Trimax believes strongly in a standards based approach. Our products are designed to interface with nearly all existing access technologies. While Trimax has a recommended approach for the last 100 meters, our solution remains flexible. This flexible architecture allows the utility or service provider to decide what technology is best to use to bridge the last 100 meters to the home. However, we believe that our method of premise access combines the best of safety, economy, and flexibility.

Differences in Power line Technology

In order to best understand Trimax's unique approach, one must first understand the full context of potential BPL solutions.

Overview

Broadband over Power line (BPL) technology, also known as power line communications (PLC), can be divided into three distinct areas, each deployed on separate parts of the electric distribution system:

- medium voltage (MV)
- low voltage (LV)
- In-premise

MV Access (Last Mile)

The MV portion of the distribution network covers the area from the distribution substation to the customer's transformer. The substation converts transmission voltages down to levels that carried on the distribution network (approximately 3 to 34.5 kV in the United States). The customer transformer then further 'steps down' the voltages to levels that are safe to use in the home.

LV Access (Last 100 meters)

The signal is injected at or near the distribution transformer where it is ultimately delivered to the home or office via the low-voltage wires. Trimax's MV solution allows the MV signal to interface not only with LV BPL but also a variety of other technologies, giving the utility or service provider flexibility to bridge the distance between the customer transformer and customer equipment with the appropriate signal delivery equipment that is most economical.

Public utilities own and operate the power grid and can use electrical wiring for power line communications with minimal upgrade costs. Older buildings and facilities are ideal structures to benefit from the BPL solution. Legacy buildings that may have issues with asbestos, or historical preservation, can obtain the same benefits through the use of the electrical wiring present in their building to provide internal high-speed internet and telephone access.

Power line Network Schema

The power grid is designed and to pass a 60 Hz signal through transformers. A characteristic of the 60 Hz signal is that it does not have constant impedance. These impedance changes increase the degradation of the high frequency signals over a given distance. This results in the requirement to deploy more active devices in the power grid which could result in a less reliable and robust communications system.

- BPL technologies use various techniques, such as low frequency carriers (under 3,000 Hz), that allow a signal to pass through a distribution transformer and reduce the effect of degradation caused by impedance variations in the system.

- BPL technologies typically use a Radio Frequency (RF) carrier2 (20,000,000 Hz - 450,000,000 Hz) with a signal required on each transformer. Although purchase and installation cost of the bypasses are projected to below (by the vendors), ongoing maintenance costs may not be.

For example, any active device requiring a power source and electronic components is susceptible to power surges and lightning strikes that may cause failure. BPL technologies use a higher frequency RF signal with repeaters required every 1,500 to 2,500 feet.

Our Role

Trimax operates as a network access and content delivery player within the Broadband value chain. In effect, Trimax leverages both its PLC and BPL solution to equip an operator (i.e. Hydro Utility) to broker Content/Aggregation (i.e. Various Content providers) to the operator's target markets (i.e. the Utility's current customer base).

BPL Services

- Broadband access technology (high-speed internet, telephone/voice, IPTV, movies-on-demand, video conferencing).
- Hydro utilities with alternate revenue sources by offering their clients additional services such as high-speed internet; voice, data and video services, and smart home services (automated meter reading).
- Utilities with the means to deploy automated-meter reading services, to address the need for real time data in order for them to manage energy consumption. Utilities are being proactive in controlling electrical consumption during peak hours to avoid blackouts.
- Utilities with the last-mile solution can extend their fiber networks to residential and commercial customers over the electrical grid at low deployment costs.
- Traditional telecom companies can access customers that previously could not be reached due to high deployment and support costs.
- Hydro utilities and service providers with the control and management of data on the PLC network.
- Consulting and training services to PLC clients.
- Residential and commercial developers with a low cost alternative for enabling data communication for every electrical outlet within new and existing developments.
- PLC will provide the foundation for smart-home networking.
- Security camera surveillance network using electricity grid

Typical BPL Architecture

Trimax BPL applications use the existing hydro lines to distribute both voice and data transmission. Traditional telecom systems (whether fiber or old style copper) can easily be integrated to power line communications, effectively extending the telecom system for distribution over the hydro grid. Combining both Hardware/Software as a complete solution allows us to provide the following:

- Broadband up and downstream capacity;
- Existing power grid infrastructure;
- Integration into existing telecom/cable carrier systems.

Trimax has developed, pre-built access solutions that easily integrate into distribution equipment for high need markets such as utilities, telecom, the hospitality sector, public institutions, commercial businesses and residences. These pre-built solutions reduce implementation costs and enable rapid time to market for (Internet) service providers, and can be configured further to meet specific customer requirements. The PLC infrastructure is an attractive technology for the distribution of various feature rich broadband internet services.

Services

- Cable and Internet
- Wireless LAN
- IPTV
- Home Networking/Entertainment - HDTV and Video on demand
- Telephony - Voice over IP
- Medical monitoring
- Home security & Automation
- Appliance monitoring and Maintenance
- Utilities automated meter reading
- Industrial Network Automation

The Utility's Perspective

No Participation

- The Electricity utility has no interest in the BPL network and the broadband business.

Partnership

- The Hydro utility leverages its key strengths (network infrastructure, electrical device installation) while outsourcing other parts (network design, Internet access operations,
- Operations/management, sales, support). Telecom – This utility is in the ISP business and is responsible for all network operations.
- 0% Network Operator/ 100% Utility

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Roles/Requirement Options

Utility Provides

- Network as “Open-Access”
- Provide, Install / Maintain Fiber Network
- Utility to install/maintain BPL “pole-to-pole” network

Trimax Provides

- Complete BPL Equipment Network Solution
- Utility qualified worker/contractor to install/maintain BPL “pole-to-pole” network
- Internet Content
- Customer Care and Billing
- Network Management
- Data for monitoring Power Outages

Benefits to the City

- Leverage Existing Electric Infrastructure
- Improve Quality of Life to the Community
- Economic Development – Education,
- Enhance Response to Power Outages
- Foundation for Utility Applications
- Fiber Extensions are Multi-purpose