

Digital Transformation for Substation Maintenance and Operational Intelligence in Utilities

Industry Use Case

Challenge

Large transformers and mature assets in many distribution grids are approaching expected end-of-life. Aging equipment could lead to failures that cause revenue loss, safety risk, and damage to critical downstream equipment. Maintaining backup transformers or replacing them long before reaching end-of-life are capital-intensive and energy-inefficient strategies.

Solution

Wunderlich-Malec digitizes utility assets in the field to provide relevant and critical information for the new **Utility Digital Workforce**. Having accurate information via VIP Power helps utilities make smarter decisions that drive efficiency and reliability through operational intelligence and condition based maintenance (CBM) strategies.

Benefit

Leveraging a 360° view of their assets, utilities can now optimize operations to actual, real-time conditions.

VIP Power provides improved access to trusted data and eliminates the need for costly data science teams, custom coding, and manual data conversion, while yielding reliable analyses that deliver operating and business results.

Trusted Solution

Wunderlich-Malec's VIP Power Solution aligns with the Utility Industry Leader. SEL Hardware is proven and trusted in the marketplace:

- WM – VIP Power
- SEL – 3355 PC Hardware

Business Challenges

The operating landscape for today's utilities is changing. Aging infrastructure and new demand sources continue to add complexity to everyday tasks and drive the need to find tangible business value in substations and other remote and maturing assets.

In addition to maturing assets, Federal mandates are changing how utilities operate. To deliver reliable power without compromising safety and cost, utilities must provide 24/7 monitoring of their assets and embark on a new **digital transformation** strategy.

The Solution: VIP Power

To help utility customers make timely, data-driven decisions, Wunderlich-Malec created the **VIP (Virtual Information Portal) Power** solution. VIP Power helps companies to digitally transform their operations by allowing them to obtain accurate and relevant information visualize their custom assets via our rugged mobile handheld windows 10 device.

VIP Power is a market ready solution that plugs easily into all existing SEL bay systems. By utilizing SEL hardware, the equipment chosen is both proven and trusted in the Utility marketplace. The integrated configuration allows VIP Power to run 100% isolated in a static mode, or if needed, the SEL PC can easily connect to HQ via a dedicated IP address.

The VIP Power System provides a comprehensive 360° view of the operational substations and offers the following benefits:

- **Improved Conditional Based Maintenance (CBM)** – Reduce unscheduled downtime through better detection and accurate documentation.
- **Faster Troubleshooting** - Capture critical real-time conditions via video, snapshots, thermal scan images, or 3rd party media.
- **Better Remote forecasting** and demand response management.
- **Streamlined Maintenance Costs**, increased asset availability and smarter capital



VIP RedLine



VIP Capture



VIP On-Demand

VIP Power – Digital Transformation is needed and critical

VIP was created due to a customer request and need. Several years back, a Utility customer was having retention issues with their newly hired young engineers. Exit interviews revealed need for better documentation, trusted procedures and the ability to get on-demand training to ensure safe daily operations. This information became a wakeup call for this Utility – resulting in **VIP Power**.

Today, VIP Power brings companies dedicated to the long-term success of the utilities marketplace together.

This IIoT solution is based on a Windows 10 platform and can utilize most any Windows 10 Tablet for mobility. The VIP system is fully open and scalable – multiple tablets can be added to the system to fit a utilities need.

VIP Power Solution

- SEL – 3355 PC
 - Windows® 10 IoT Enterprise LTSBB
 - Intel i7-3612QE Quad Core 2.1GHz
 - 3 Slot - 19" Mini Rack
- WM – VIP Power
 - 250 QR VIP Tag System
 - VIP On-Demand
 - VIP RedLine
 - VIP Capture
- Dell Latitude Rugged Tablet
 - HAVIS – Rugged Docking Station
 - VIP Client License(s)
 - 100 Printed VIP QR Tags



VIP Software for the Digital Transformation

The solution utilizes **VIP Power**, a world-class application layer for today's power distribution and transmission industry. VIP Power is a real-time maintenance tool created specifically to improve efficiency and increase productivity for utility operations.

Features	With VIP Power – Value add Software Modules - Users Can Now...
VIP On-Demand	Core product for scanning a VIP QR TAG displays: Schematics, Manual, P&ID – PDF format. URL Links to web pages & Specific Video Content, Email and phone links.
VIP RedLine	A Document Management tool that allows users to “RedLine” or Modify Drawings - Once modified via RedLine, the system will only use the latest modified drawing. RedLine stores all modifications, provides revision control, and provides historical recall for user review.
VIP Capture	An automated process for importing 3rd party SOPs, images and files into the VIP Server Database. The user links videos, data or images to the desired VIP QR Tag with their VIP mobile device - allowing information gathering, SOPs, and historical analysis.

Summary

The utility market is a changing and highly regulated industry demanding safety, security and operational excellence. Real-time information for better business decisions is critical for operational and maintenance success.

VIP Power helps find tangible business value in such assets as substations, breakers, and aging infrastructure. . VIP Power provides a mobile-ready, off-the-shelf solution that supports condition-based maintenance (CBM) and delivers operational success in an aging environment. With VIP Power, utility customers can gain operational visibility and real-time business insights by connecting mature assets for 24/7 monitoring.