

July 2008



## Power Agent Systems

# Case Study

## Telecom Operators' Achieve Higher Network Reliability and 60% Lower Maintenance Cost with PAS

### Company:

Midwestern US Telecom Operator

### Industry:

Telecommunications

### Sales/Service Area:

Midwestern and Southeastern U.S.

### Overall Impact:

- Reduced battery power failures
- Reduced costs associated with battery failures by 60%
- Provided reliable and accessible data regarding battery life, admittance and other valuable information.
- ROI was 11 months

### The Customer

This Telecom operator has been in business for two decades and acquired most of its new sites in the Midwest region of the US but has sites in the Southeast as well.

The operator's residential and business customers rely on consistent uninterrupted service. The success of their business depends upon the reliability of the network.

### The Challenge

Almost all of the locations are remote and in some instances, during the winter months, access is extremely difficult. Prior to the installation of the Power Agent Systems (PAS) Battery Monitoring System preventive maintenance visits were scheduled for four times a year and happened at least three times a year.

Due to the remote nature of the sites, the average labor rates for those PMs were higher than the industry average of \$650 a visit (data point per AT&T Wireless.).

In the four years prior to the installation of the PAS system, this operator suffered two network outages as a result of an ice storm in the Midwest and a hurricane in the Gulf Coast Region. Despite regularly scheduled preventive maintenance visits, inadequate battery back up power compounded network outages by failing to supply the necessary emergency power when needed.



### Power Agent Systems Advantages:

- Patented Digital Signal Processing
- Lowest Price Point by 35%
- Most Technically Advanced Method
- Open Standard and Open Minded Design
- Hardware and Software Decoupled
- Most Flexible, Scalable, and Easily Installed System in the Market

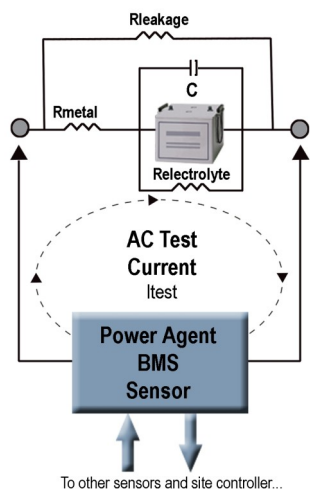


Figure 1.1

## The System

The operator purchased the PAS system in June of 2007 for installation at all 112 sites. At each site they installed approximately twelve sensors and one controller. In total there were 1,344 sensors and 112 controllers. The typical configuration is shown in figure 1.1. Each PAS sensor generates a digitally synthesized sinusoidal AC test signal ( $I_{test}$ ) which is passed through the battery terminals in order to measure the battery's admittance. A site controller unit communicates with each of the sensors to collect these admittance measurements, along with battery voltage and post temperature.

Through our SNMP-based interface the customer is able to easily gather all necessary information to monitor their batteries and the total system. In this case, the customer collects information regarding admittance, temperature and voltage for each battery over their own private network. From this information, the customer has been able to track overall battery trends and improve inventory management

Two install teams of three employees each were able to install all sites and complete software integration in approximately four weeks.

## Operator Highlights

- Systems have been running for 18-24 months.
- Since installation of the systems, technicians have greatly reduced the number of site visits.
- Technicians rely on the information and alarms generated by the PAS system.

## The Benefits

The operator initially considered remote battery monitoring as an enhancement to their then-current preventive maintenance programs. Since installing the systems, however, technicians have greatly reduced the number of site visits, relying instead on the information and alarms generated by the PAS system.

On-site visits are now limited to visual inspections as well as to implement required maintenance as indicated by the monitoring system. Furthermore, the overall number of site visits as well as the risk of total network failure has been greatly reduced. The systems have been running for 18 to 24 months and the ROI analysis is based on conversations conducted over the course of the sales, installation and support processes.

Overall the ROI is 11 months, with the annual cost reduction of 60%. We have found from the simplicity of the interface as well as the information being easily gathered and disseminated, the PAS system has changed the nature and value of battery monitoring.