



Find what matters.

Analytics Software for
a World of Smart Devices



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The Challenge – Turn Data Into Actionable Intelligence

From building automation systems to electric meters, thermostats, appliances and even individual sensors – smart devices of all types are now capable of communicating valuable information about their environment and operation.

Access to this data opens up new opportunities for the creation of value-added services to help businesses reduce energy consumption and cost, to identify opportunities to enhance operations through improved control, and to validate investments in energy savings measures.

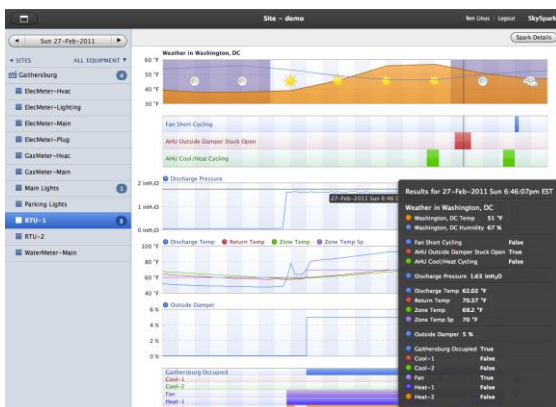
Access to the data is just the first step in that journey, however. The new challenge is how to manage and derive value from the exploding amount of data available from these smart and connected devices. *SkyFoundry's SkySpark directly addresses this challenge.*

Analyzing Operational Data – SkySpark

How do we let busy managers and operational personnel know that something is worthy of their attention? Is it possible to make sense of operational data with minimal, or no, human intervention? Can we impart our knowledge of equipment systems to software to enable it to find issues, patterns, and faults? *SkySpark provides the solution.*

SkySpark allows domain experts to capture their knowledge in “rules” that automatically run against the data produced by smart systems. Employing “semantic tagging”, pattern recognition, functional rules processing and other techniques, SkySpark’s analytics engine provides the ability to automatically identify issues worthy of attention. The result – *the capability to tell the user what they need to know about the performance of their systems.*

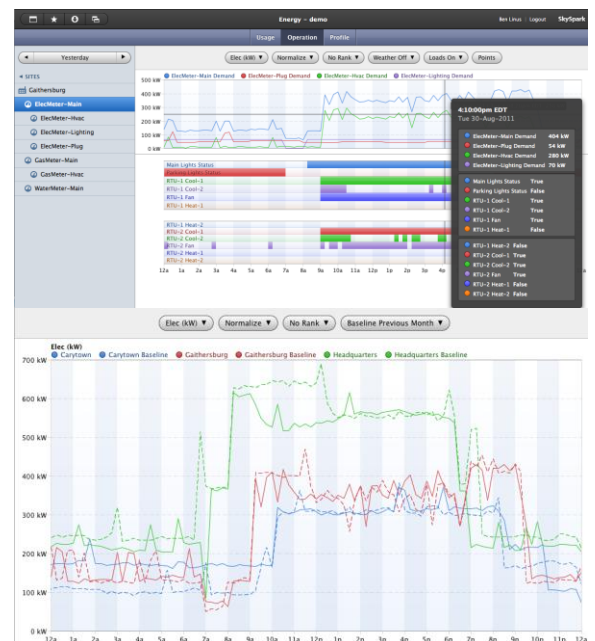
SkySpark works with data of all types – whether via a live link to an automation system or smart meter, connection to an SQL database, an import of historical data from Excel files, or a web service feed from a utility – SkySpark can consume, manage and analyze your data.



You Have The Data: “Let’s Find What Matters.”

The past decade has seen dramatic advances in automation systems and smart devices. From IP connected systems employing a variety of standard protocols, to support for web services and xml data schemas, it is now possible to get the data produced by the wide range of devices in today’s buildings.

The new frontier is to efficiently manage and analyze that data to **find what matters.**



Give Data Meaning

Instead of relying on conventional database schemas, meaning and relationships – “semantics” – is accomplished using “tags”. Tags are added to data items as needed to convey definitions and associations. For example an air handler might have tags that define the site, building and city it is located in, the fact that it is an electric load, the manufacturer, its capacity, its schedule, associated control parameters, etc. Individual data points can have as many tags as needed, and tags can be added ad hoc whenever additional meaning or relationships are needed. The tags then provide the hooks that the analytics engine uses to correlate and analyze the data.

| elecMeterRef | equip | hvac | rooftop | siteRef |
|-------------------------|-------|------|---------|--------------|
| Gaithersburg Meter-Hvac | ✓ | ✓ | ✓ | Gaithersburg |
| Bon Air Meter-Hvac | ✓ | ✓ | ✓ | Bon Air |
| Short Pump Meter-Hvac | ✓ | ✓ | ✓ | Short Pump |
| Headquarters Meter-Hvac | ✓ | ✓ | | Headquarters |
| Va Beach Meter-Hvac | ✓ | ✓ | ✓ | Va Beach |
| Woodley Park Meter-Main | ✓ | ✓ | ✓ | Woodley Park |
| | ✓ | ✓ | ✓ | Bon Air |

Add Column

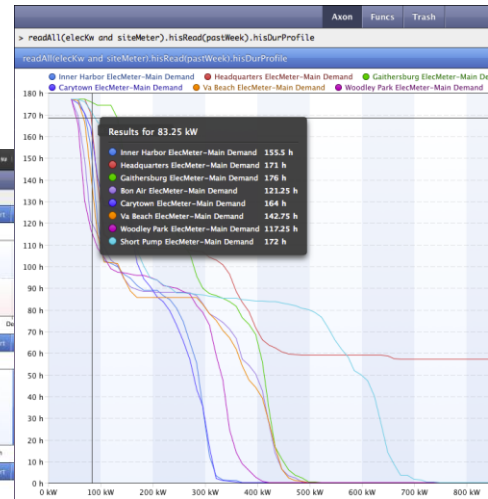
Name

Value

Analyze

Analysis is accomplished with a unique data analysis “engine” known as Axon. Axon provides a comprehensive set of functions for manipulating and analyzing data. The system implementer writes rules using the Axon Language, which are then processed by the Axon engine. Define an issue once, save it, and activate it – SkySpark will find it forever. Create new rules based on new observations or ideas at anytime – all without affecting your underlying systems. And rules can be combined and linked together. Build a library of rules that capture the essential items that matter to your application or your

customer. *The value of your library continues to build with every new rule you add.*

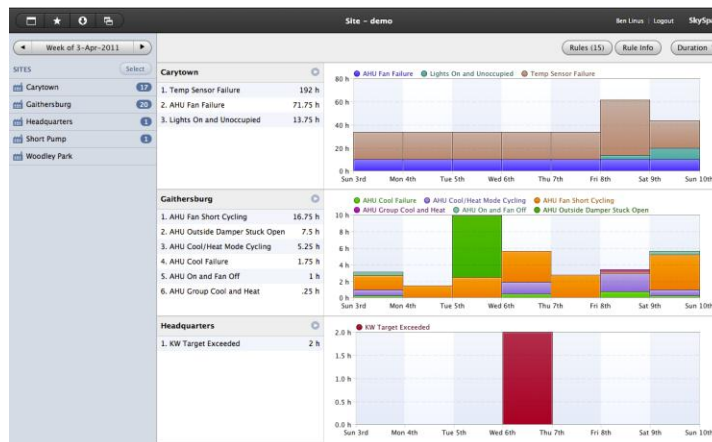
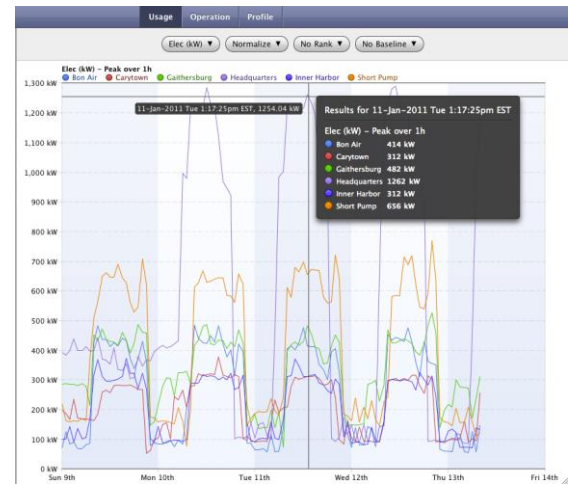
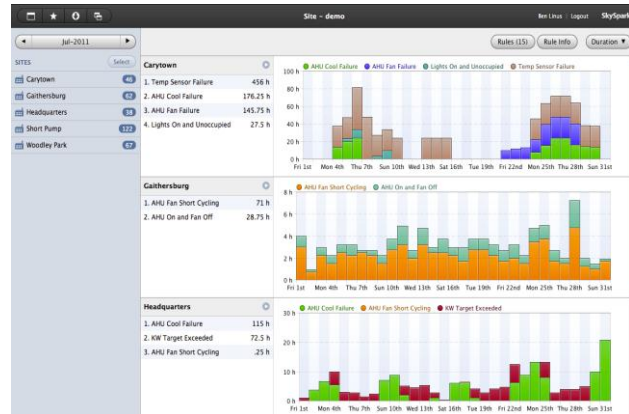


The Result

When Axon rules “hit” or find their target they create a “spark” – our term for an issue that matters. Sparks then generate notifications and displays for the user.

SkySpark includes a rich set of visualizations for data – intuitive, graphical presentations delivered to a standard web-browser using “html5” technology.

SkySpark can also send emails and alerts and output analytic results to third party applications via published API’s.





About AIRON Group of Companies

The Airon Group of Companies is a highly specialized Building Automation Integration firm with experience in the energy management field since 1993.

We are currently working with several clients developing energy analytic tools to fit their existing building automation systems and expanded facility architectures.

We have developed applied partnerships with key equipment manufacturers and software development firms. We utilize the development tools available to provide very specific solutions to meet the application and budget needs of our clients.

In your facilities we will analyze the existing BAS components and the technological era in which they were installed. Based on this analysis, we will develop a plan to implement an Energy Management Information System. This system will be designed to control costs and maximize the features of your energy analytic services.

As an independent integrator we are not limited by any one manufactured product. Through combinations of our own computer and mechanical engineering expertise with the most technologically advanced products, we are confident you will be extremely satisfied with our products and services.

Our success is built on our performance.

www.airongroup.ca

SkyFoundry