CASE STUDY

ADVANCED REMOTE TELECOM SITE AUTOMATION

Asentria®

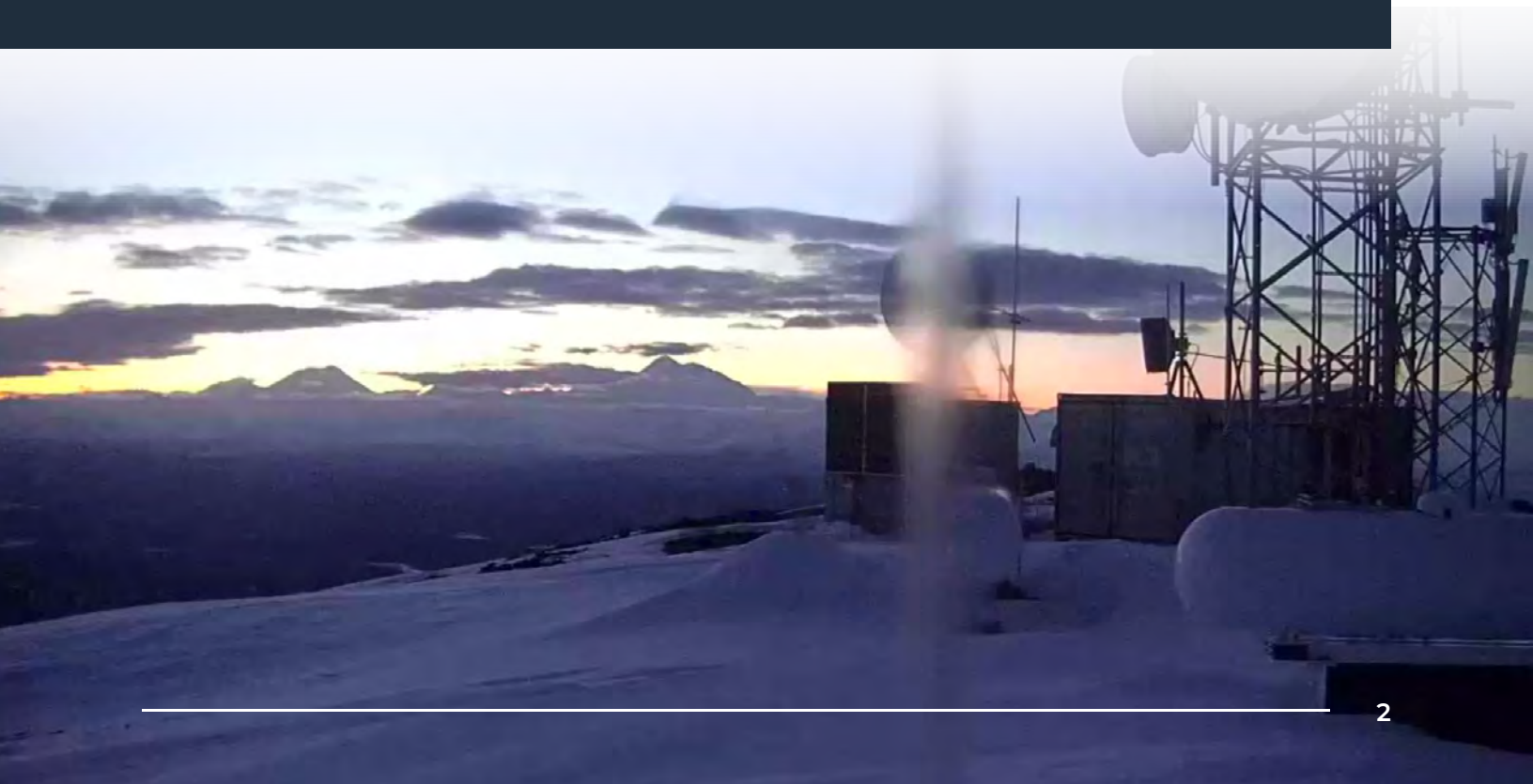
Introduction

During the early telecom site design planning in Alaska, the customer knew they wanted to use the SiteBoss device to control the transfer of power sources. With a remote site on a mountain-top, the device enabled all the benefits of a telecom site automation application.

Using the SiteBoss to control the transfer of power sources at the site helps prevent the failure of a site using a single power source. By using multiple power sources, the customer reduced the number of site visits for regular maintenance and saved a significant amount on costs. The mountain-top site also integrated the SiteBoss device with Intermapper, a network management software. The integration allowed for a high degree of visibility of how the site is operating and improved maintenance visits by understanding the specifics of a site issue.

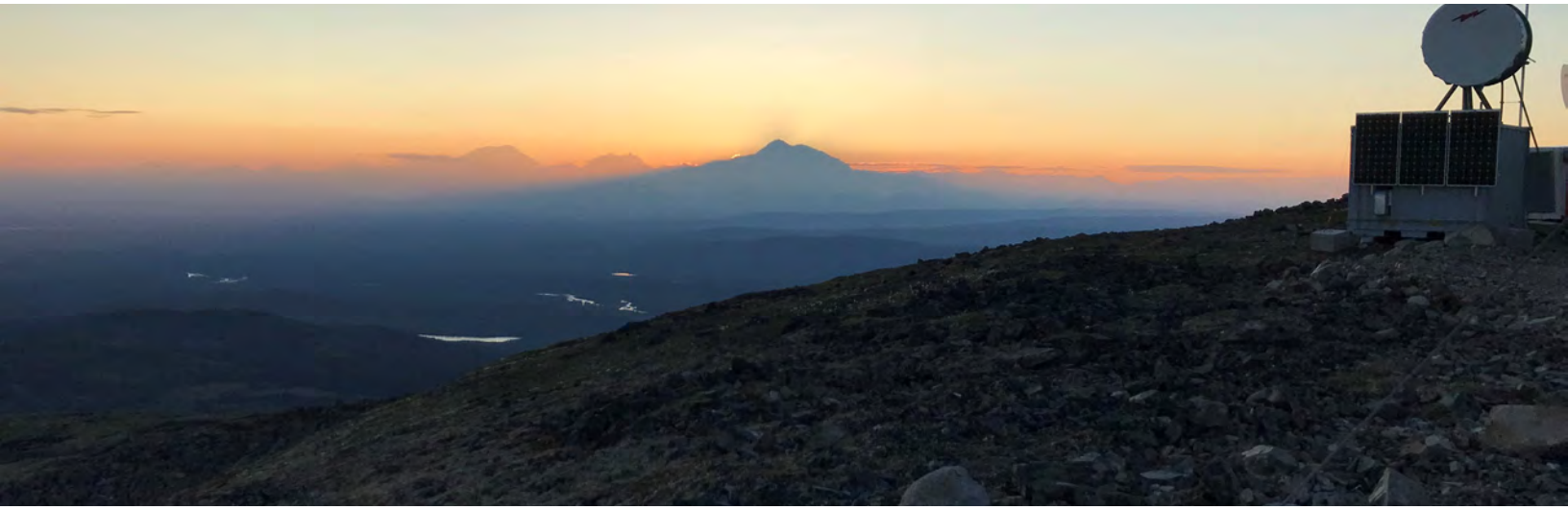
The customer is Alaska Communications, who has a strong background in telecom site design and management based on many years of experience. Alaska Communications has also worked with Asentria products for many years and has become an expert user in creating a true telecom site automation application.

> ***"Using the SiteBoss we were able to integrate alarming, monitoring and control into one easily managed device!"***



Customer Challenge

The primary problem is difficulty in accessing this site, a mountain-top location in Alaska. The site needed to be designed with the highest level of reliability and redundancy as possible, as the site is accessed by helicopter. Many times the site becomes inaccessible due to poor weather conditions.



A view of North America's tallest mountain Denali from the customer's site.

Objective

The site is designed to be highly reliable and efficient using the SiteBoss 550. It is not possible to easily visit the site, and if a visit is required, it is expensive.

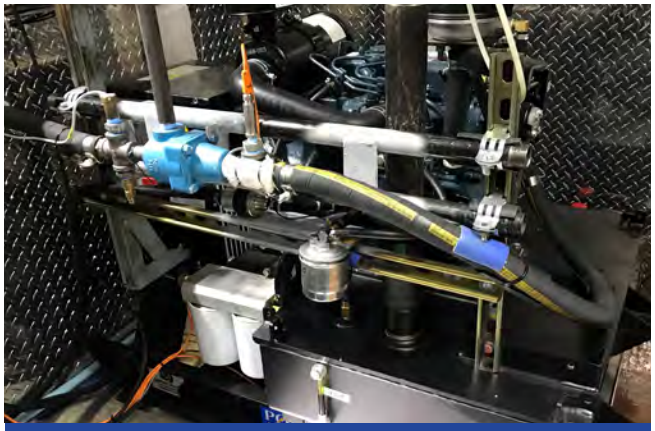
- Manage power at the site by switching between power sources to increase site resilience and extend time between service visits.
- Manage environmental systems at the site by controlling environmental conditions through direct control of fan and vent controls at the site.
- Manage security cameras and lights at the site.
- Give a clear picture of the status at a site, and provide remote wireless IP access to allow troubleshooting of individual systems.

Solution - The SiteBoss Site Controller

The SiteBoss appliance was integrated with Intermapper software to create a complete automated solution. LUA scripting used in the SiteBoss automatically controls many site functions including starting and selecting one of five available power sources. The customer can track both the total and oil run times and even use the SiteBoss to send notifications when run times have been reached. The site uses redundant wireless routers for connectivity and has deployed two SiteBoss devices on the local LAN for redundant control of critical functions.

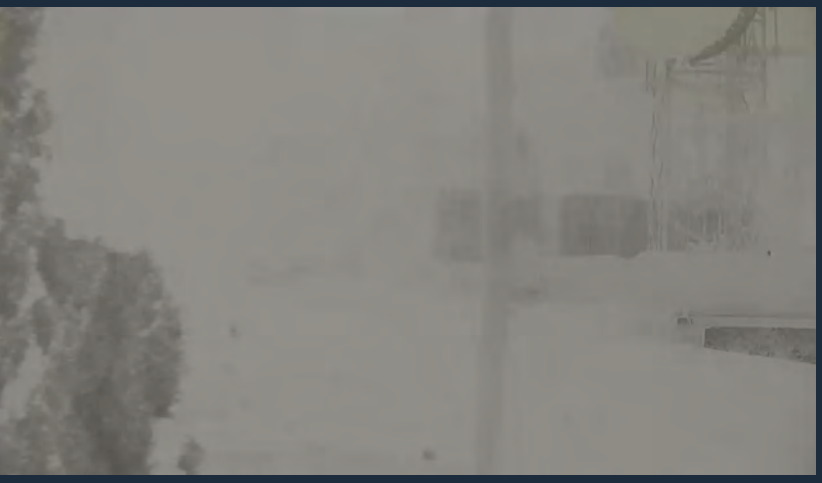
***Note*: "With well over a year of operation the system is running flawlessly!"**

The SiteBoss watches site power, including multiple Kubota generators, autonomously transferring through power sources based on conditions at the site, as well as controlling the exercise function of the fuel pumps.



Special Customizations:

The site uses MIXER VALVES (blue) on the Kubota's, to keep the engine water return temperatures perfectly controlled which greatly improves the longevity of the engines. Centrifuge oil filtration, which removes small abrasive particles, was also installed to augment the two cartridge filters.

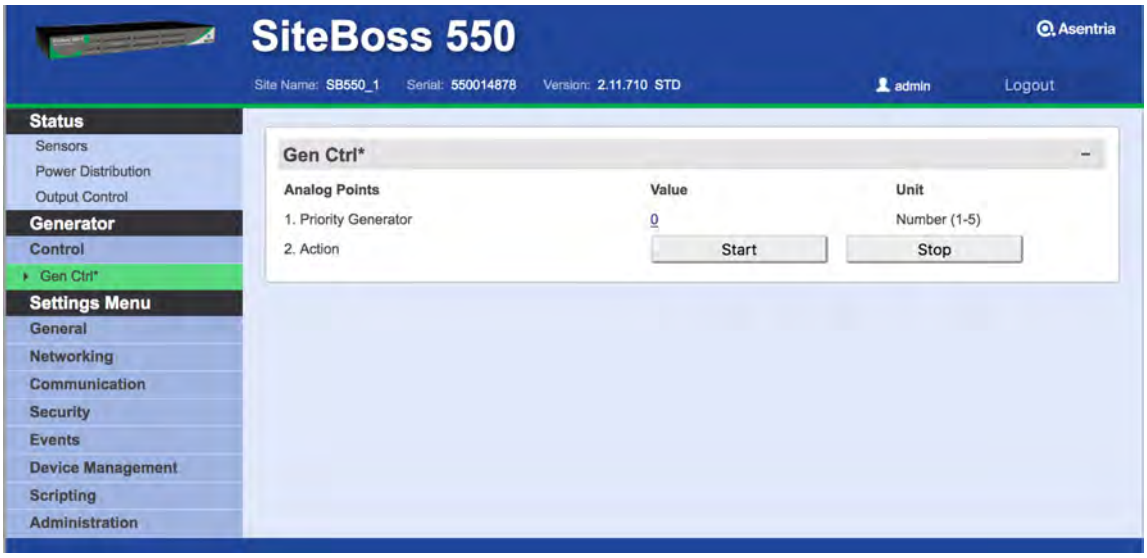


Additional Visibility

The SiteBoss controls environmental conditions at the site through direct integration with the Johnson Controls fan and vent controls. The SiteBoss also provides direct access to the security cameras located on-site on the inside of the buildings. When a door is opened, the security camera turns on the light and provides a security video of the person entering the enclosure. Audio from the cameras provides additional input visibility to site and generator conditions.

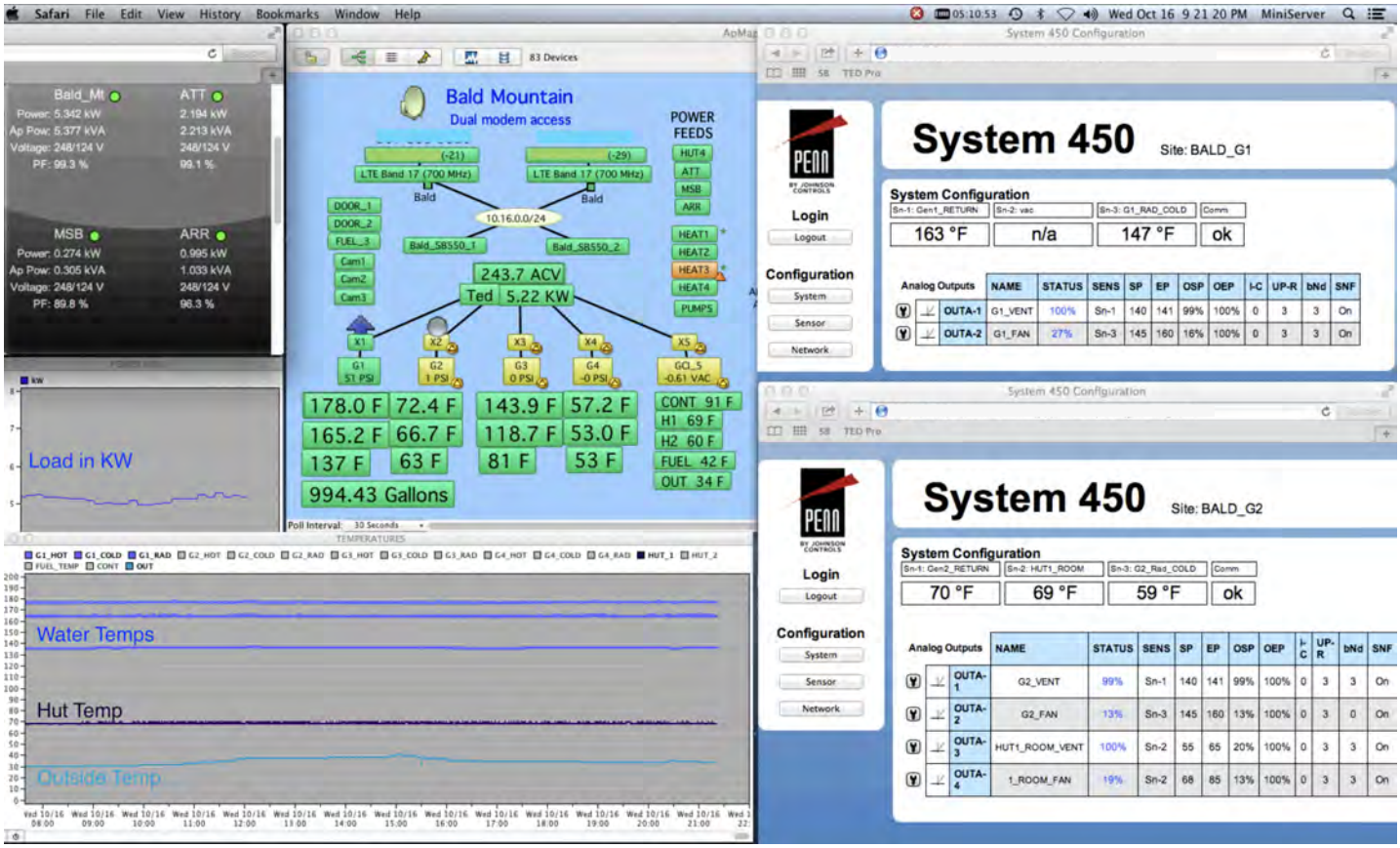
Solution (Continued.)

(The SiteBoss 550 Dashboard viewing the Output Control status page.)



(The SiteBoss 550 Dashboard viewing the Generator Control.)

Solution (Continued.)



(A mix of network management system status screenshots, including InterMapper to graph analog points and provide a single page view of the site status.)

Customer Benefits

- Maximize the reliability of sites.
- Reduce the quantity and frequency of site visits from 4 visits to 1 visit a year with increased visibility and automated notifications.
- Aiding a helicopter pilot's weather observations with extensive monitoring and video capabilities.
- Decreased the cost spent on a helicopter to access the site's location.
- Ability of track over 85 alarm points.

Customer Testimonial

"LUA is used in the SiteBoss to automatically control the generator transfers and has been operating flawlessly for a year. Using four generators and long run sumps we can run a year between oil changes! InterMapper works well for both historic graphing and single page display for all required monitoring points. We use the SiteBoss to track both total and oil run times and even use the it to send notifications when run times have been reached.

The system has redundant wireless routers and actively displays the frequency and level to assure redundant paths. The status of all remote power feeds, heaters, transfer switch positions, power, voltage, oil pressure, fuel level and more are available on the display using a computer or smart phone. From the InterMapper display we can double click a device to open its web configuration page so the display is really the sites dashboard.

The chopper service receives automatic alerts once the fuel level decreases to 500 gallons.

Although we have never had to use the capability we installed a second SiteBoss as a backup. When activated it shuts off the primary and its automatic control and allows selection of one of the generators to be operated and transferred to the load."

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