



TowerView Powered by BitBox

Operation of any facility for commercial purposes is subject to all of the traditional concerns associated with infrastructure. Power, security, fire risk, weather, and safety. Tower Operators, however, face several unique challenges, including:

- Unstaffed and unmanned locations
- Requirements of critical infrastructure (24x7 uptime)
- A massive number of sites often in difficult to access locations

These unique challenges coupled with an ever-expanding portfolio size, often in foreign markets for some operators, has forced tower operators to reevaluate how facility infrastructure is managed to limit operational expense while retaining (or increasing) tower site operation reliability on a global scale.

Typically, a reported problem leads to a service dispatch to investigate and repair the issue with little remote insight into the exact scope to aid the engineer before arriving at the site. This methodology often leads to expensive multiple service trips and unwarranted emergency truck rolls. To further complicate this issue, often various software monitoring systems for each sub-system exist on-site, each with separate software, making a truly unified view of operations difficult across a large portfolio of sites.

The BitBox Platform takes a different approach to monitor tower infrastructure en masse allowing for monitoring of all critical infrastructure across the globe, regardless of the subsystem and placing it into a single monitoring and analytics platform hence switching maintenance to a proactive activity. The BitBox Platform as a Service (PaaS) quickly deploys into existing or new sites enabling an operator to manage and monitor every operational subsystem remotely.

This centralized philosophy goes well beyond just trouble identification, allowing for significant other operational benefits to impact operational performance and uptime over the life of a portfolio.

Preventative Maintenance

Utilize site data and existing subsystem metrics to diagnose and prioritize site problems and service calls, reducing unnecessary truck rolls.

Energy Spend

Track and compare energy spend between sites to reduce inefficiencies and identify out of tolerance equipment. Additionally, monitor demand response events from utilities, and monitor manage alternative energy sources such as solar and wind as needed.

Critical System Monitoring

Monitor generator power, fuel consumption, battery backup status/health, and be alerted about power condition changes in real time and also trend historical site energy problems.

Security

Allow real-time camera surveillance, access control, and security monitoring globally with remote configurable notifications of problems to responsible authorities or operational personnel.

Typical TowerView Architecture



Collect

One **BitBox** per site gathers data from Modbus, BacNet, SNMP, IoT, serial devices, or other connected sub-systems. Wire and go. Zero onsite software configuration.



Organize

Provision all BitBox equipped sites in the cloud, and organize all your data in the **BitEngine** into a unified data-collection. Additionally, you can choose to house your data in AWS, Azure, GCP, Digital Ocean, or company-owned infrastructure and work order management.



Deliver

The **BitAPI**, driven by the BitEngine, provides a web-accessed dashboard allowing for a centralized view of all sites and performance criteria with simple to configure alarming capable of sending SMS and email messages of out of bounds conditions. The dashboard also allows sophisticated reports to be generated to foster preventive maintenance.

Beyond these critical operations functions, the BitAPI allows for a secure GRPC or REST API connection to any 3rd party applications, analytics providers, or cloud platform allowing for tight automated workflow integration as well as custom application development.

