



Integrated Oil and Gas, Powered by BitBox

While distributed oil and gas rigs have harnessed sensing technology for years, recent advances in both advanced sensing devices and analytics brought to us by IoT and cloud analytics services have allowed for significantly more data-driven predictive maintenance.

According to a recent McKinsey study, technology can reduce costs by up to 27% by assuring the most consistent up-time, while also increasing energy efficiency by as much as 10%.

The same data enablement can also aid in downstream efficiency by improving supply chain logistics and allowing adaptability to consumer behavior which has shown can lower costs by up to 10%, and increase revenue by 3%.

All of this is possible only if data from sensing technologies is collected, organized and harnessed in real-time from upstream production. Bitbox enables this capability through its distributed Edge Platform, easily integrating into existing production sensing systems, and allowing full portfolio analytics and data refinement, while also allowing for scalable deployment on and offshore.

The BitBox platform takes into account the unique challenges of the oil and gas industry by allowing for a distributed cost conscious EDGE-based data collection infrastructure. Easily deployed using a single appliance, the BitBox hardware collects all critical sensing data located on an array of platforms, rigs, or other critical infrastructure and securely transfers it a central data-collection where it can be organized and analyzed for mission-critical applications and increased operational and maintenance performance.



Integrated Operations

Remotely monitor and manage remote fields or off-shore infrastructure collectively from a central location through the central aggregation of all field sensing data thereby improving reservoir recoverability, optimized production, and reduce health and safety risks with real-time data.



Improved Logistics

Increase material planning caused by market volatility and supply limitations with integrated data with third-party suppliers.



Increased Asset Management

Lessen the burden for on-site personnel and costly downtime through trackable and schedulable preventative maintenance instead of responding to critical failures in remote locations.



Simplify Operational Oversight

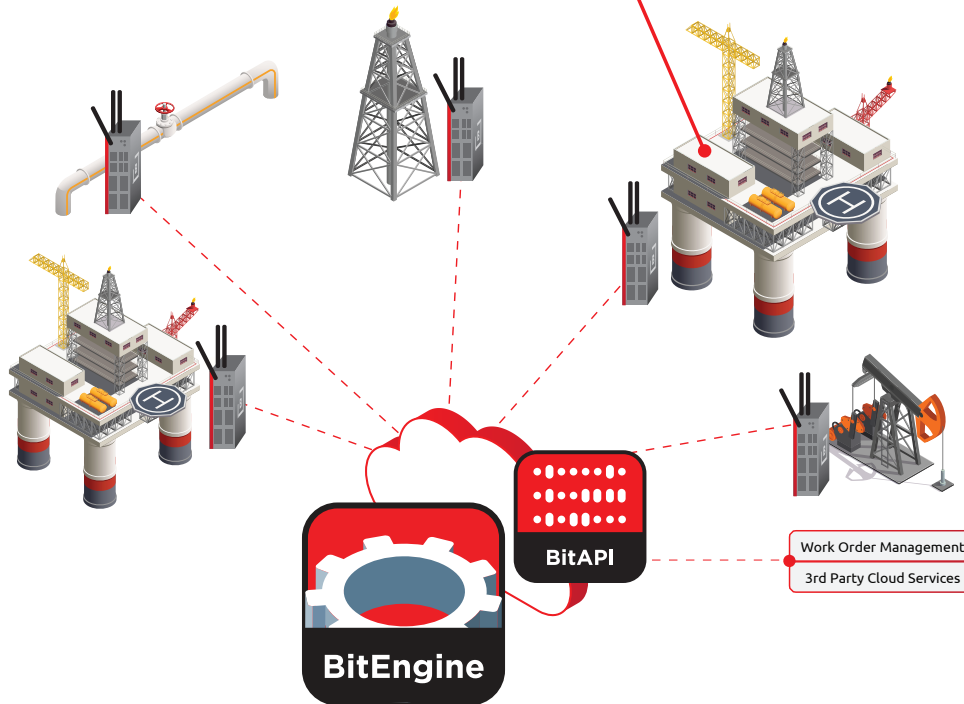
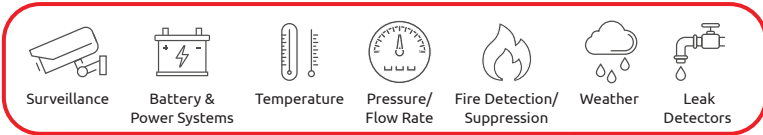
Multiple software systems for monitoring and oversight make critical real-time decisions more complicated. Centralizing remote operational management into a single source of truth for data allowed refined reporting of operations while also allowing quick decisions and actions to be made based on consolidated facts.

The Architecture of an Oil & Gas Solution



Collect

One **BitBox** per site gathers data from Modbus, BACnet, SNMP, IoT, serial devices, or other connected sub-systems. Simple to install and deploy in both existing infrastructure or new designs. Wire and go. Zero on-site software configuration is necessary. The BitBox appliance is also capable of extreme remote communication when off-grid using 4G or Satellite uplink.



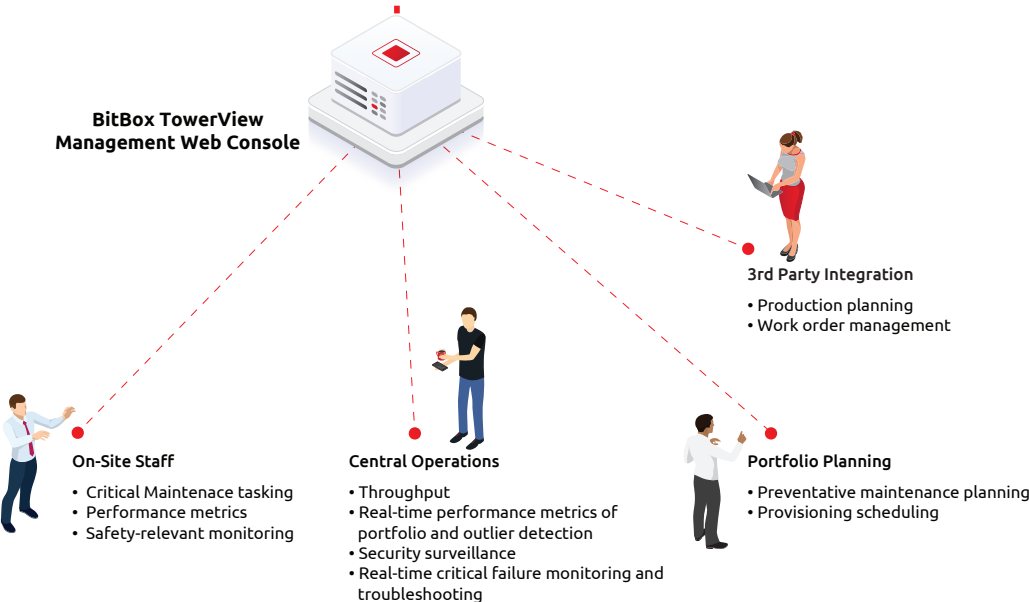
Organize

Provision all BitBox equipped locations in the cloud using the BitEngine secure management portal, and organize all location data into a private unified data-collection. Data can be placed in data lakes setup in AWS, Azure, GCP, Digital Ocean, or company-owned infrastructure.



Deliver

The **BitAPI**, driven by the BitEngine, provides a web-accessed dashboard allowing for a centralized and per site views of the portfolio and all performance criteria with sophisticated configurable alarming capable of sending SMS and email messages of out of bounds conditions on demand. Additionally, sophisticated reports to be generated to foster preventive maintenance activities or run daily field tasking.



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.