Mobile Energy Provider Implements Ignition for Dynamic, Remote SCADA

Ignition Edge Devices Support Fleet of Smart Assets

You run out of asphalt a mile or two before you reach Certarus' Rocky Mountain House filling station, the closest remote site to their control room located almost thirty stories above downtown Calgary. But for Certarus — a low-carbon energy provider, delivering compressed natural gas (CNG), renewable natural gas (RNG), and hydrogen to industrial customers with no pipeline access — this site barely qualifies as "remote."

"We work in the toughest conditions," said Chi Fang, Vice President of Technology at Certarus, "remote sites with no cell service, roads that don't show up on any map." And to properly provide for customers so far off the grid, Certarus requires a specific business model as well as a specific type of SCADA solution.

When most people think of SCADA, they probably imagine a plant floor defined by production lines. Odds are though, this mental image features stationary equipment. In contrast, Certarus' assets are always on the move, which makes sense, because SCADA only begins to describe the organization's use of Ignition — the enterprise industrial integration platform for SCADA, IIoT, HMI, and more.

A Move to Ignition

Certarus' business has grown dramatically over the years. Prior to this implementation,

Certarus' Ignition system manages their mobile and dynamic fleet of smart trailers across North America as they travel in and out of cell coverage, handling the end-to-end natural gas value chain.

Certarus' previous SCADA platform struggled to deliver the high degree of resilience required for their rapidly expanding mobile fleet. In order to maintain their best-in-class service offering, Certarus had to invest in a best-in-class system. "Our use case called for a unique combination of scalable, decentralized architecture, uncompromising uptime, and a multifaceted user experience," said Fang.

SCADA for a Dynamic, Mobile Fleet

Certarus' Ignition system manages their mobile and dynamic fleet of smart trailers across North America as they travel in and out of cell coverage, handling the end-to-end natural gas value chain. Ignition is now the backbone of Certarus' OT platform, giving everyone from field technicians to executives real-time visibility

"Essentially, Ignition acts as the nerve center for our job sites."

– Chi Fang
Vice President of Technology, Certarus

and control over hundreds of unmanned job sites.

Certarus' primary business involves transporting natural gas to supply large industrial customers that don't have pipeline access. As such, Certarus' fleet of trucks is constantly moving — in Texas one month, in Canada the next — and network availability and accessibility can vary greatly. Ignition can autoselect the strongest cell signal in a particular area, connecting wirelessly to a customer or partner's WiFi signal, or via Starlink.

Technology-Enabled Service Quality

Certarus is relied upon as critical energy infrastructure by high-demand customers like data centers and utilities. Therefore, the number one priority for this implementation was reliability: the system functions 24/7 with 99.99% uptime, so any outage, no matter how small, would have a large impact on business continuity.

The Ignition system is extremely robust, and it has to be. With over 500 users across the company (including customers), Certarus monitors over a billion data records a day in Ignition, with many tags reporting at one-second intervals to capture sudden condition changes, which can greatly affect logistics decision-making in the control room. "Ignition is the main user interface for our operations teams, providing an overview of job sites and equipment for every region on a single pane of glass," said Fang.

Beyond data collection, having Ignition directly on edge nodes allows Certarus to remotely control equipment. "Instead of dispatching a technician to drive eight hours there and eight hours back, we can make quick adjustments to setpoints on Ignition, saving thousands of man hours per month," said Fang.

Smart Trailers & Customer Integration

As the system was in development, Certarus recognized that they could leverage Ignition to go beyond typical monitoring and control of their assets. Certarus is retrofitting nearly 900 trailers with multiple sensors to measure data like the amount of gas in a cylinder and critical safety information. Leveraging the power of Ignition Edge, Certarus transformed each trailer into a smart asset.

The Ignition Edge-enabled devices can communicate with any smart trailer within range, displaying data in Certarus' system for advanced processing and client consumption. "Our customers count on us not only for excellent service, but also for insight into their operations," said Fang. "Ignition allows us to extend control and monitoring capabilities to our customers, so they can track operations in real time, just like we do."

This bidirectional interoperability can directly feed data into the customers' systems, eliminating manual reports and optimizing operations with second-by-second visibility. In an industry that doesn't simply prioritize uptime and efficiency, but requires it, this type of customer integration is a true

competitive advantage for Certarus. “Essentially, Ignition acts as the nerve center for our job sites, monitoring mobile assets that move in and out of proximity and integrating with our customers and partners onsite,” said Fang. “Currently, we’re the only company in our industry with this technology.”

New Uses For Data

For Certarus, the migration to Ignition was foremost about future-proofing their operations. The move also establishes a platform to facilitate cutting-edge initiatives like AI and machine learning. “Ignition is the digital heartbeat of our operations,” said Fang. “It is the source of truth for operational visibility. It feeds our predictive dispatch algorithms, intelligent maintenance, and customer data solutions, all of which are pillars of our growth strategy.”

Certarus dispatches up to 10,000 deliveries per month, which is a tremendous logistical challenge. To meet this highly complex demand, Certarus feeds real-time data from Ignition into their proprietary algorithms to automatically make load recommendations for the logistics team.

For a company as future-facing as Certarus, Ignition provides the perfect tool for continual growth. “As our business evolves, so does the need for more IoT sensors, more AI-driven workflows, and more integration with a whole ecosystem of customers and partners,” said Fang. “Ignition is the operations technology platform that will scale with us on that journey.”

Project Scope

- Start Date: September 2022
- Deploy Date: Parallel November/December 2023 - Cutover/Go-Live February 2024
- Tags: 600,000 real-time tags
- Screens: Approximately 500 views built for the system
- Clients: ~500 active users
- Alarms: 4,000
- Devices: 550 edge nodes running Ignition Edge
- Architectures: Hybrid: built in Azure and Postgres with timescale for historian/SQL
- Databases: Postgres with timescale for historical; heavy use of Postgres relational database
- Historical Data: ~3GB of historical data generated per 12 hours

---

Certarus is a provider of on-road low-carbon energy solutions, delivers clean-burning fuels to energy, utility, agricultural, and industrial customers. Their fully integrated platform encompasses compressed natural gas (CNG), renewable natural gas (RNG), and hydrogen. By displacing carbon-intensive fuels, Certarus champions a cleaner energy future across North America, ensuring reliability and sustainability for their diverse clientele. Learn more at https://certarus.com/