source allies

Enabling Smart Agriculture with AWS IoT

SUMMARY

Our client, a leading producer of grain bins and dryers, serves a global agricultural market with operations in the United States, Europe, Australia, and beyond. While their mechanical equipment is widely adopted, they sought to modernize their systems by enabling remote monitoring and control of grain bins using client applications(mobile, web and desktop).

They lacked internal AWS expertise, so they engaged Source Allies to help build the cloud infrastructure from the ground up. The goal was to create a scalable, secure, and legally compliant foundation that would allow users to interact with grain bins remotely, while ensuring safety, precision, and reliable connectivity in rural and often offline environments.

SOLUTION

Source Allies designed and implemented a cloud-based backend platform to support remote grain bin monitoring and control. Starting from the ground up, the team architected a robust AWS infrastructure centered around IoT Core to support seamless and secure device onboarding, telemetry ingestion, alerting, and access control. When a control panel at a grain site comes online, it automatically registers as a device in IoT Core, establishing secure communication with the system. It then transmits real-time telemetry data such as temperature, humidity, moisture, CO_2, and weather for ingestion, processing, and analysis.

A complex permissions model was developed to meet strict operational and legal requirements. Real-time alerts and notifications were also integrated, with delivery across multiple channels based on user settings, critical for both functionality and compliance.

In parallel, Source Allies helped the client establish CI/CD pipelines and organize their AWS environments into development, staging, and production, while training internal staff to manage the system going forward. The platform supports offline-first functionality and multilingual use, anticipating rural deployment and global expansion.

RESULTS

5 months

MVP delivered in 5 months

Global

Globalization support built in/in place

Scalable

Scalable architecture in place

www.sourceallies.com 4501 NW Urbandale Dr., Urbandale, IA 50322 515.279.2640