

Case Study

Unified Environmental Monitoring Platform on a Single Cloud with Continuous Engineering & QA Support

Rishabh Software helped unify the cloud platform of two merged IoT businesses, improve device data reliability, and streamline QA for their companion mobile application.

PROJECT OVERVIEW

Following a merger, two US-based IoT manufacturers struggled with disconnected systems, stalled feature releases, silent data loss, and inconsistent QA for their regulated mobile app. Rishabh Software unified both businesses on a single cloud platform and built a structured QA practice.



Capability

Cloud Application Development and QA Automation



Industry

Environmental and Industrial IoT



Country

United States

KEY FEATURES

The business needed continuous engineering support to keep its cloud-based environmental monitoring solution reliable and release-ready, plus structured QA to move a compliance-sensitive mobile app from manual, error-prone releases to automated delivery.

Continuous Platform Engineering and Issue Resolution

The engineering team was embedded into the client's delivery workflow, owning the Vue 3 front-end, the backend-for-frontend layer, and surrounding microservices end to end. Features shipped faster and issues got resolved before they escalated into outages.

Proactive Data Completeness Monitoring

A dedicated monitoring service catches ingestion gaps in real time and turns silent data loss into a clear signal the team can act on.

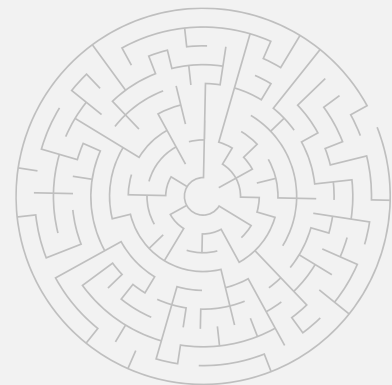
Resilient Telemetry Ingestion Pipeline

The team built and maintained a distributed ingestion architecture covering API consumption, MQTT message handling, Kafka-based event relaying and scheduled exports. Field devices on unstable networks had significantly reduced risk of silent data loss.

Automation QA Support for Regulated Mobile Releases

Ongoing QA automation support for the companion mobile app, covering regression testing and functional validation to help ensure data integrity and correctness standards before releases reach regulated end users.

CHALLENGES



- Billing and account data lived in two different ERPs, so customers with products from both brands had no single view of their account.
- A growing customer base and device fleet needed fast, consistent engineering support that an in-house team couldn't sustain cost-effectively.
- Separate ERP systems, tax configurations and back-office workflows across product lines added constant integration complexity to a microservices layer that needed ongoing maintenance.
- Remote field devices on MQTT and HTTP, running over unstable networks, risked delayed or missing telemetry with no way to catch the gaps.
- Payments and refunds had to be reconciled manually which caused delays, resulted in errors and required extra accounting effort.
- A regulated mobile app for pharmaceutical and cold-chain use cases needed release rigor that manual QA couldn't consistently deliver.

SOLUTION

To address these challenges, we built a cloud environmental monitoring platform designed to unify two merged brands without a disruptive rewrite. Here's how we architected the solution to bring both brands onto one system while keeping every existing customer's data intact:

Single Front-End, Two Legacy Brands

One Vue-based web application became the entire customer-facing experience, device configuration, live and historical data views, dashboards, maps, and account and billing management, for customers of both merged brands.

Microservices-Powered IoT Platform

Instead of replacing the client's core device platform, we built independently deployable Node.js and TypeScript microservices around it, each with its own deployment configuration, so business logic, data ingestion and event handling could evolve without touching the legacy core.

Data Reliability Built In

A dedicated completeness-checking service surfaced gaps in device data ingestion directly, and a shared observability package standardized Prometheus metrics and Grafana dashboards across every service the team shipped.

ERP and Tax Unification

We built a payment event handler that consumed billing events and a shared ERP-resolver package to handle dual-instance tax calculation and route payments, renewals and refunds to the correct back-office system based on brand.

TECHNOLOGIES & TOOLS



Outcomes

40%

Reduction in cross-brand support handling time

3X

Faster detection of data ingestion issues

50%

Faster bug resolution time

ABOUT RISHABH SOFTWARE

As a Digital Engineering and Enterprise Transformation leader, we empower businesses to scale, innovate, and thrive in today's digital-first world through technology rooted in trust and transparency. We leverage emerging capabilities such as Cloud, Data Engineering & Analytics, AI, Automation and Application Engineering to drive digital transformation and unlock new opportunities. We have successfully served across 25+ countries, and we work towards customer delight as "WE CARE."

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