

How a U.S. O&M Provider for Solar Farms

Modernized Field Operations With an AI-Ready Digital Platform



45%

Faster Development

40%

**Greater Engineering
Efficiency**

50%

**Improvement in Field
Data Reliability**

The Client

- Leading operations and maintenance (O&M) provider for solar farms across the United States
- More than a decade of renewable energy industry expertise
- Combines technical depth, investigative rigor, and operational urgency
- Helps asset owners maximize uptime, operational performance, and return on investment (ROI)
- Delivers reliable field services while maintaining rigorous safety standards



The Challenge

The client relied on an existing Field Tool application built on a legacy tech stack that could no longer meet the needs of its distributed workforce operating across remote, low-connectivity solar farms.

Business Challenges



Inefficient workflows made it harder for field technicians to stay productive and complete tasks on time.



Tracking time manually led to payroll errors, additional administrative work, and slower processing.



Delayed field updates made it harder to see what was happening and make informed decisions.



Inconsistent data made it difficult to plan the workforce, report accurately, and remain compliant.



A nonintuitive user interface frustrated technicians and made it harder to get started with the platform.



Offline features were limited, so some data was not captured and syncing was often delayed.

Technical Challenges



The legacy application did not work well on mobile devices or tablets used in the field.



Performance varied across iOS, Android, and Windows, creating an inconsistent user experience.



Authentication and system connection issues made it hard to access critical operational data.



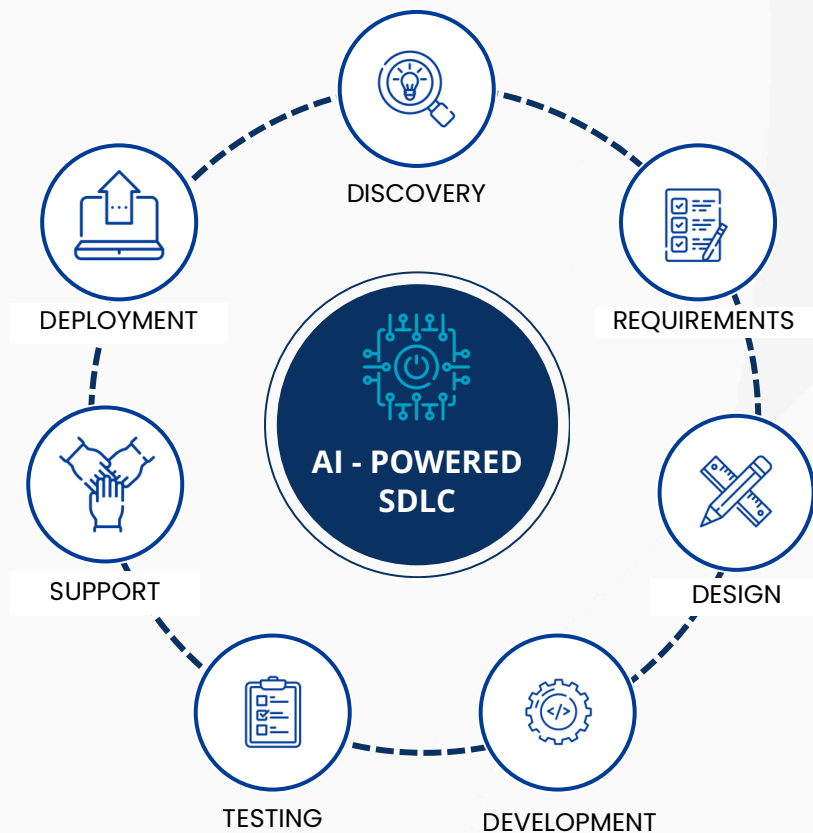
The system was outdated, so improving the application was expensive, complicated, and hard to scale.



Managing and maintaining multiple applications across disparate technology ecosystems increased complexity, cost, and operational risk.

The Solution

Opteamix used its human-led, AI-powered approach to modernize the legacy Field Tool into a cross-platform digital platform. Our AI-driven software development lifecycle (AI SDLC) supported every step: discovery, requirements, design, development, testing, deployment, and support. AI tools helped us deliver faster, while our skilled architects, business analysts, software engineers, and QE Engineers ensured flawless implementation.



Integrated Field Operations Platform

- Consolidated key field activities on a single platform to streamline workflows and reduce manual work.
- Reengineered the legacy application as a Progressive Web App (PWA) and made it available within a native app.
- Ensured the app works the same way on iOS, Android, and Windows devices.



Offline-Ready Field Operations

- Enabled field technicians to capture operational data without requiring continuous network connectivity.
- Implemented automatic background synchronization when connectivity was available.
- Reduced incomplete records, data loss, and reporting delays in remote locations.



Integrated Workforce Management

- Embedded time and attendance capabilities into existing field workflows.
- Introduced GPS-validated time reporting to improve accuracy and compliance.
- Reduced application switching, duplicate data entry, payroll errors, and administrative rework.



Field-Optimized User Experience

- Redesigned workflows to reduce steps and manual input required to complete field activities.
- Created responsive layouts optimized for smartphones, tablets, and desktops.
- Added intuitive navigation and light and dark modes to improve outdoor usability.



Secure and Scalable Architecture

- The Progressive Web Application (PWA) architecture enabled a single application to operate across Windows, Android, and iOS while preserving platform-specific native capabilities.
- Integrated the platform with the client's enterprise identity management system.
- Implemented role-based access control to protect operational and workforce information.
- Established a modular architecture to support faster enhancements, evolving business requirements, and future growth.



AI-Powered Delivery Across the SDLC

Opteamix applied its AI SDLC across requirement discovery, design, development, testing, deployment, and support.

- Used AI tools to speed up requirements gathering, documentation, and designing solutions.
- Used AI in engineering tasks to boost productivity, efficiency, and improve code quality.
- Accelerated test creation and validation for various workflows, devices, and integration points.
- Combined AI automation with guidance from skilled architects, engineers, and business leaders.



The Outcomes

During a period of rapid growth, the Client found that its old Field Tool could not keep up with the demands of field operations. Upgrading to a modern platform provided the efficiency, visibility, and scalability needed to expand.

Strategic Business Outcomes Delivered

- By streamlining workflows, teams got more done in the field and completed tasks faster.
- GPS-validated time reporting improved payroll accuracy and reduced administrative work.
- Offline features kept operations running smoothly, even at remote solar farms with poor connectivity.
- Accurate field data gave teams better operational insight, supported workforce planning, and enabled smarter decisions.
- Automation helped lower operating costs and made it easier for the business to grow

Benefits Delivered



**35%
Faster
Development**

AI SDLC practices accelerated design, development, testing, and deployment.



**Unified
Cross-
Platform
Experience**

The PWA delivered consistent functionality across iOS, Android, and Windows devices.



**40%
Greater
Engineering
Efficiency**

AI-assisted engineering reduced repetitive development and testing.



**Enhanced
Field
Experience**

Responsive layouts, simplified navigation, and light/dark modes improved outdoor usability.



**100%
Reliable Data
Synchronization**

Offline data capture and automated synchronization ensured data completeness in remote locations.



**Scalable and
Secure
Architecture**

Modular architecture, enterprise authentication, and role-based access created a secure foundation for growth.



Ready to Modernize Your Legacy Applications?

Reduce risk, validate value early, and build a clear path from legacy systems to future-ready applications.

Schedule a free modernization assessment or discuss your transformation roadmap with Opteamix experts.

Schedule a Modernization Assessment
Talk to Our Experts

About Opteamix

Opteamix is an AI-powered technology services company headquartered in Denver, Colorado, with a delivery center in Bengaluru, India.

We help enterprises modernize, build, and operate technology with AI-powered, human-centric solutions that combine engineering excellence with a culture of continuous innovation.

Guided by our purpose of **Simplifying Success**, we partner with organizations to drive scalable growth and meaningful business transformation.



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