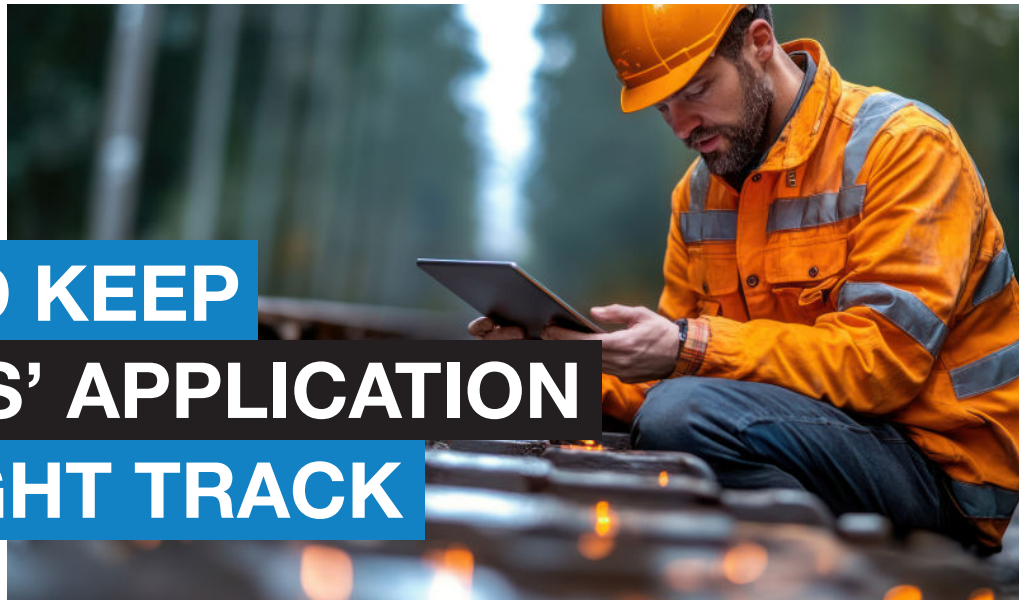




WE HELPED KEEP RAILWORKS' APPLICATION ON THE RIGHT TRACK



Objective

Completely rewrite the front end of the Railworks Insight application to native iOS, prior to Cordova's imminent deprecation.

Solution

Seisan transitioned the RailWorks Insight Digital Inspection and Management Solution to native iOS to ensure the application's stability, performance, and long-term sustainability prior to the end of Cordova support.

LEVERAGED TECHNOLOGIES

- iOS Native
- Swift 5
- UIKit
- MVC Architecture
- iOS MapKit
- Google Maps API
- Map Caching (MapCache)
- Core Data

PLATFORM INTEGRATION

- Client-Provided APIs
- iOS MapKit & Google Maps API
- Camera Functionality
- Offline Mode
- Data Upload Mechanism

CORE CAPABILITIES

- Modern Mobile Development
- Enhanced UX/UI
- Removal of Redundant Features
- Improved Client Experience
- Offline-Capable Core Features
- Increased Performance

Seisan collaborated with Railworks to revitalize their web-based tool, ensuring long-term stability by completely revamping the front-end architecture while maintaining the essential functionality.

The screenshot shows a mobile application interface for 'Track Structure'. At the top, there are navigation buttons: 'CREATE REPORTS', 'DELETE TRACK', and 'EDIT TRACK'. The main content area displays 'Track 01' with a 'RESOURCES' button. Below this, there are two tabs: 'TRACK STRUCTURE' (selected) and 'EXCEPTIONS'. A descriptive text reads: 'For a track property change such as rail weight, track cover, track class, etc, add a track property change. To record a turnout, grade crossing, or other asset, add a new asset.' Below this text are two buttons: 'ADD TRACK PROPERTY CHANGE' and '+ ADD ASSET'. A table lists track assets with columns: Asset Type, ID, From, To, Subtype, Rail Weight, Defects, Conditions, Last Updated, and Duplicate. The table contains three rows: a Track (ID 01, From 0, To 500, Industrial, Rail Weight 115, Defects 0, Conditions 1, Last Updated Jan 14, 2025), a Turnout (ID 01-02, From 290, To 385, Single Turnout, Defects 0, Conditions 1, Last Updated Jan 14, 2025), and another Track (ID 01, From 500, To 1000, Rail Weight 90, Defects 0, Conditions 0, Last Updated Jan 14, 2025). At the bottom, there are icons for track types and the text 'No Other Assets'.

Asset Type	ID	From	To	Subtype	Rail Weight	Defects	Conditions	Last Updated	Duplicate
Track	01	0	500	Industrial	115	0	1	Jan 14, 2025	
Turnout	01-02	290	385	Single Turnout		0	1	Jan 14, 2025	
Track	01	500	1000		90	0	0	Jan 14, 2025	

RailWorks Insight Digital Inspection and Management Solution is the industries most comprehensive web-based inspection and reporting portal. Insight provides a full view of track inspection reports with instant automated budgets, prior repair work costs and dates, marked map GPS locations. Insight is also fully scalable, so it can handle any size rail network.

Seisan significantly surpassed feature parity with the legacy Cordova implementation for the RailWorks Insight Digital Inspection and Management Solution, and introduced numerous enhancements in both performance and usability. The app was designed for optimal off-line use, allowing field users to effectively handle track data, even in isolated areas.

SEISAN'S APPROACH / MOBILE APP DEVELOPMENT

PROJECT OVERVIEW

Seisan undertook the critical task of rewriting the front end of the Insight application to native iOS, ensuring its continued functionality in light of Cordova's imminent deprecation. With iOS set to discontinue support for Cordova in mid-September 2024, this transition was essential to maintain application stability, performance, and long-term viability. The project required a comprehensive overhaul of the front-end architecture while preserving the core functionality and business logic of the application.

SCOPE OF WORK

The development effort encompassed multiple facets, beginning with establishing a robust project architecture, networking framework, and local database management system. Key application components were restructured, including the login

authentication system, track system search and management, data entry forms, and offline support mechanisms.

Each module of the application was carefully re-engineered to align with native iOS standards, improving responsiveness, usability, and overall system reliability. Track system management features were enhanced with intuitive search, filtering, and data organization capabilities. Furthermore, dedicated pages for track properties, assets, and exceptions were built to streamline data entry and validation processes, incorporating map and photo components for enhanced visual representation.

KEY ENHANCEMENTS

Beyond feature parity with the legacy Cordova implementation, the rewrite introduced several performance and usability improvements. The application was optimized for offline usage, ensuring field users could efficiently manage track data even in remote locations. A structured

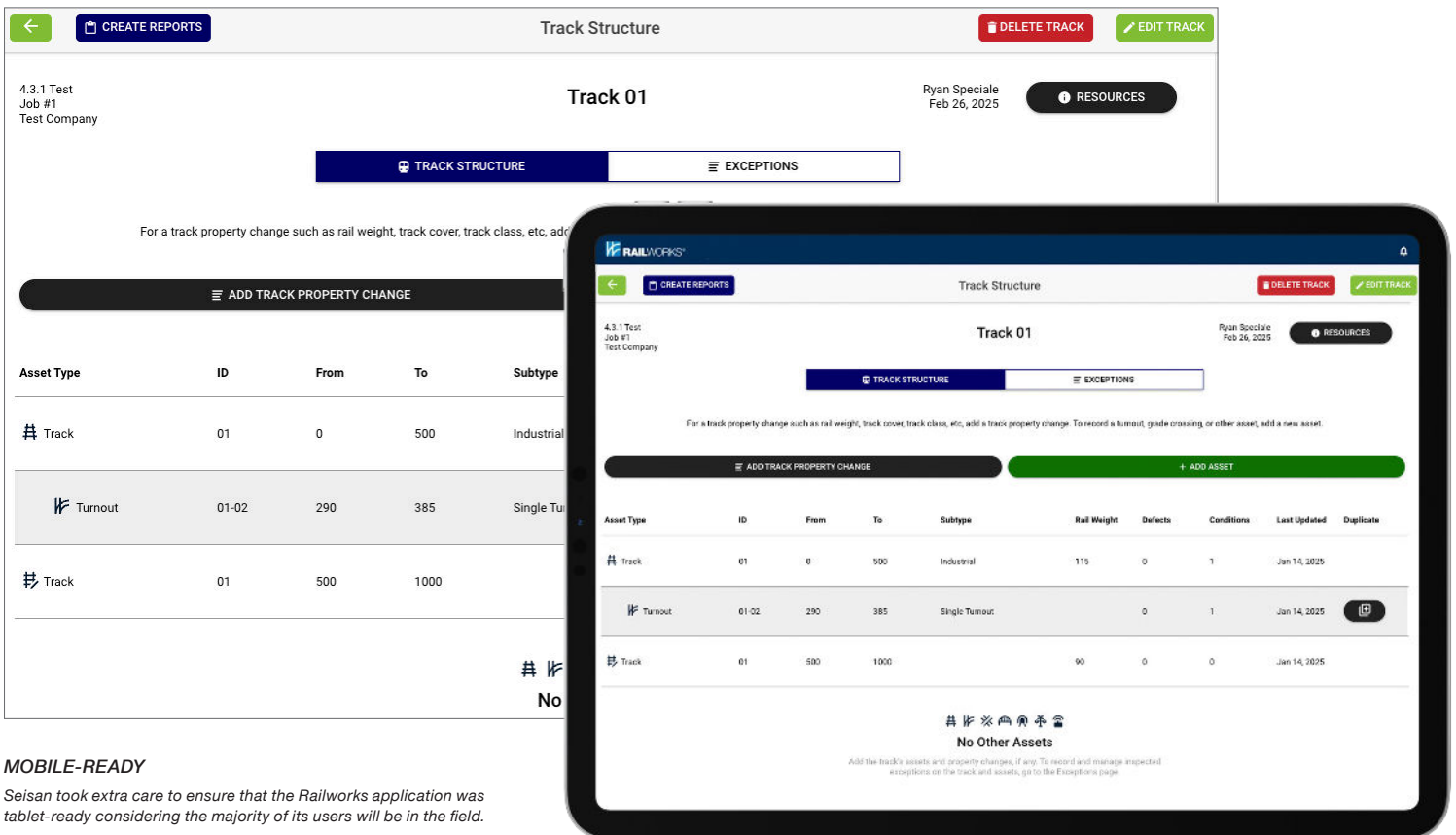
data synchronization mechanism was implemented to maintain consistency between local and cloud-stored information.

Additional refinements included the modernization of the side menu for better accessibility, the introduction of a refined profile management system, and an improved upload confirmation process to validate data before submission.

RESULTS

Seisan brought many performance and usability improvements to the RailWorks Insight Digital Inspection and Management Solution, and it greatly outperformed the legacy Cordova implementation in terms of feature parity.

Due to its ideal off-line architecture, the app was highly appreciated by users, enabling field users to manage track data efficiently, even in remote locations.



MOBILE-READY

Seisan took extra care to ensure that the Railworks application was tablet-ready considering the majority of its users will be in the field.