Case Study

ELD Fleet Management Mobile App Development

With IoT-enabled sensors for live tracking of cargo & commercial drivers

PROJECT OVERVIEW

The customer wanted to develop an Electronic Logging Device (ELD) mobile app with IoT capabilities to support fleet operations. It must help to manage Federal Motor Carrier Safety Administration (FMCSA) compliances that govern Hours of Service (HOS). Further, it would eliminate paper logs with accurate & reliable digital Records of Duty Status (RODS) for all commercial drivers.

Capability	Industry	Country
IoT Application	Logistics & SCM	USA

KEY FEATURES

The developed fleet management mobile app allows fleet owners & operators to monitor, manage driver logs and conduct vehicle inspections.

The key features of this ELD fleet app include:

▷ **Driver's Daily Logs**

Allows the drivers to log work hours on an electronic logbook and allows fleet managers to view & download reports

▷ **Real-time Tracking**

Helps record & track the vehicle's exact duty status, load records, and data points (in-motion, at rest, speed ratio) to send updates on vehicle inspection for necessary maintenance

▷ **Automated Alerts**

Sends instant notifications to both drivers and dispatchers when the driver approaches 8 consecutive hours of non-stop driving, 11 hours of driving in 14 hours & 60 hours of on-duty status in a 7-day cycle.

▷ **Driver Scheduling**

Supports and facilitates accurate planning of driver schedules & loads for fleet managers to assign loads to drivers, and change the pickup and delivery dates & times with a single tap
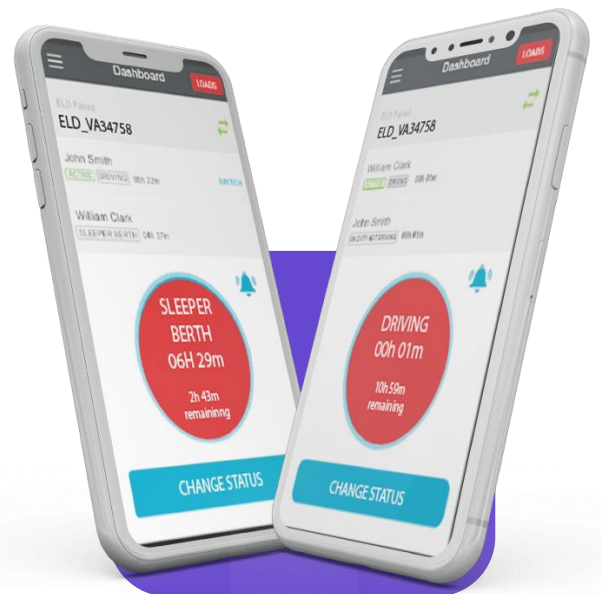
CHALLENGES

▷ Manual methods for managing a fleet of vehicles prove to be inefficient, time-consuming, and expensive

▷ Minimal traceability of driving habits & drive time adversely impacts fuel consumption & management

▷ No capabilities to track vehicle idling & fuel usage

▷ No oversight of violations of federal fleet management regulations
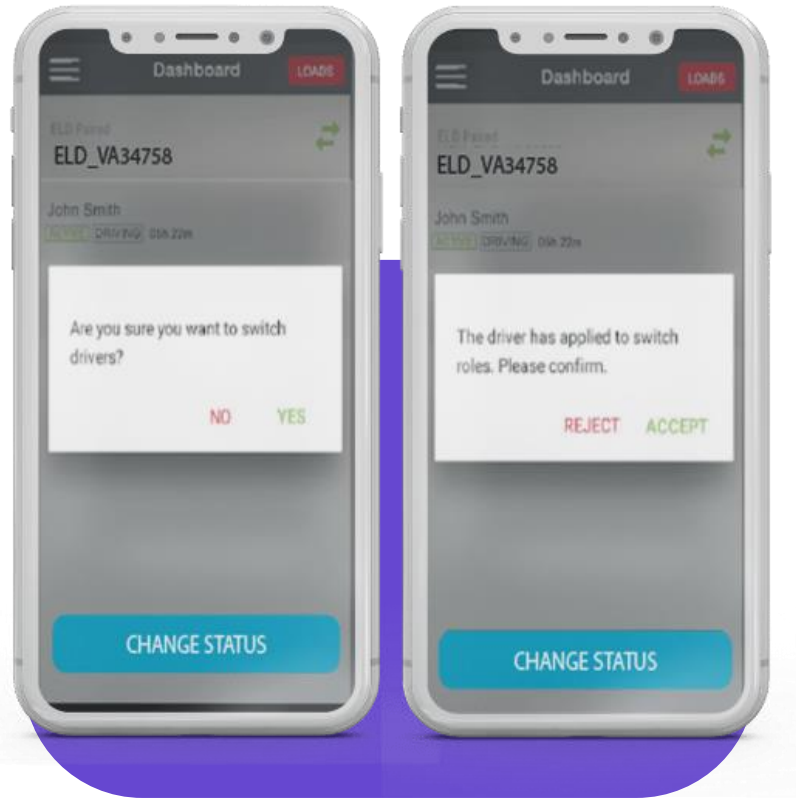
SOLUTION

The ELD fleet app development process was executed in two phases.

Phase 1: Creation of a mobile app to interact with IoT sensors (On-board Diagnostics (OBD) Port II) for GPS tracking & alerts

Phase 2: Reporting of data in a standardized format that can be transmitted to law enforcement in prescribed ways, such as wireless web services, USB, or Bluetooth 2.0.

▷ **ELD Mobile App with IoT Connectivity**

We utilized Xamarin for the development of an electronic logging device app solution. Our team integrated the app with vital components of the ELD solution including sensors, device functions, data, network-managed services, mapping & GPS functionality. It would update on vehicle status – in motion or idle. Further, tracks the driver's duty status and hours to trigger warnings in case of violation of HoS rules. Further, we also helped create a backend web console to track and map data points – from capturing the on-ground data & reporting of the same.

▷ **OBD-II Integration to ELD Solution**

The electronic logging device on board - On-board Diagnostics (OBD) Port II plugs into a vehicle's diagnostic port. It captures the vehicle's health & driver's duty status to send this data to the mobile app. The OBD port allows real-time monitoring of the engine, parts of the chassis, accessories, and body of the vehicle for running all sorts of diagnostics We utilized ELD hardware - Serial Port Profile (SPP) and Generic Attribute Profile (GATT) Bluetooth profiles to enable seamless communication between devices.

TECHNOLOGIES & TOOLS

BENEFITS

100%
automation of driver
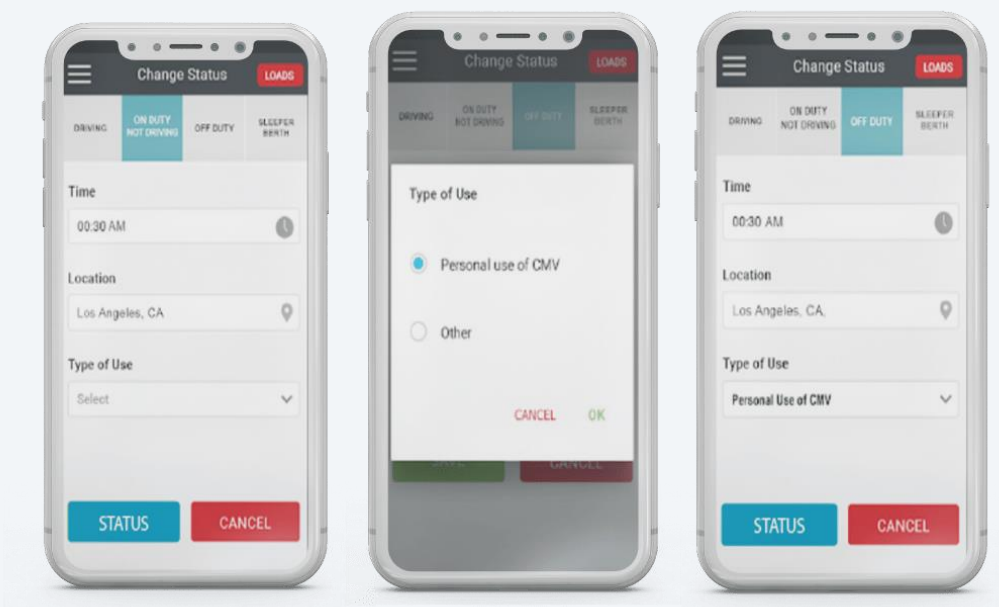vehicle inspection
reporting (DVIR)

2X
optimization of fleet &
driver efficiency

62%
increase in overall fleet
profitability with insight into
vehicle & driver performance

PROJECT SNAPSHOTS

ABOUT RISHABH SOFTWARE

We are a global provider of enterprise-grade web, mobile, cloud, and analytics solutions. As an ISO 9001 and 27001 certified software development company, we have two decades of service excellence delivering 1000+ successful projects globally, including the USA, UK, Europe, Middle East, and Australia.

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