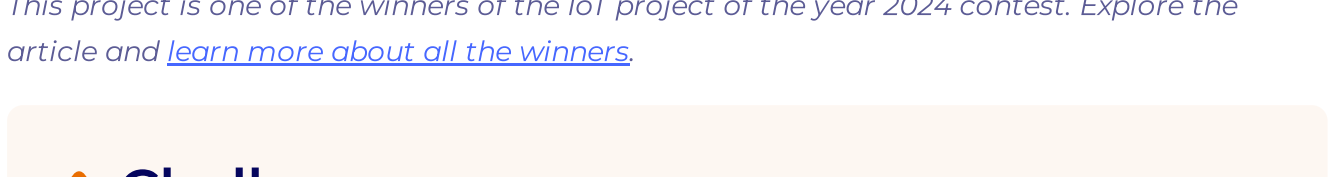




Monitoring system for tanker transport company in Honduras: reflecting road safety technology advancements



This project is one of the winners of the IoT project of the year 2024 contest. Explore the article and [learn more about all the winners](#).

Challenge

[Transportes Terrestres](#) is a fuel supply company operating in Honduras and neighboring countries, including El Salvador and Guatemala. They manage nearly a hundred tanker trucks and adhere to strict safety standards and regulations. This presents a range of challenges, the foremost being effective [driver behavior monitoring](#).

To ensure compliance with the regulations, the company must employ various technologies for road safety, such as monitoring and evaluating driver actions in real-time and responding immediately to unsafe or inappropriate behavior through direct communication with personnel. This is closely connected to general road safety awareness, requiring the ability to inform drivers and administrative staff about regulated safety measures — such as zone-specific speed limits — as well as unregulated and potentially dangerous actions like sharp maneuvers, rapid acceleration, or sudden braking.

Another critical challenge was the lack of clarity in vehicle accident investigations. The company sought to improve this process by collecting detailed data from vehicles and accurately reconstructing incidents to better understand the causes and contributing factors.

Finally, the growing number of vehicles under monitoring could lead to an overwhelming volume of notifications and alerts, which risked distracting and confusing the administrative staff. This necessitated a streamlined solution to ensure management processes remain clear and efficient.

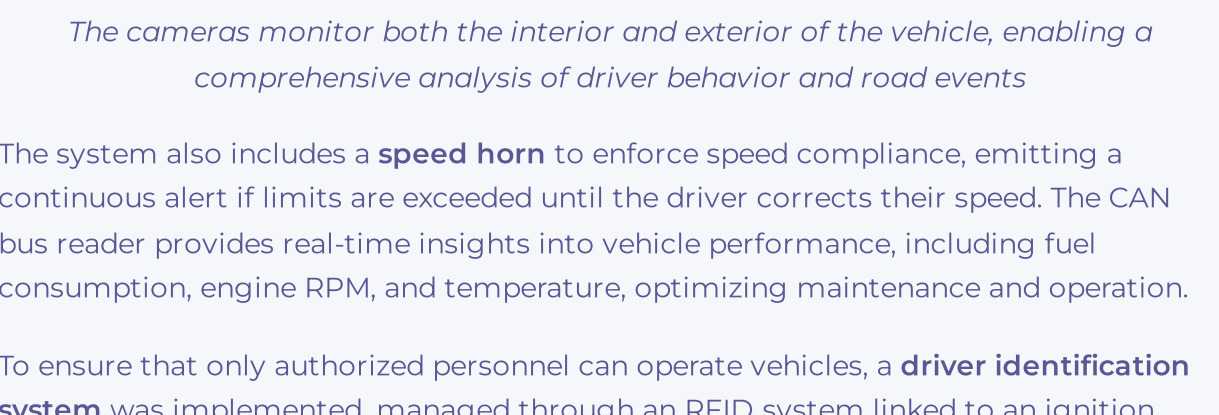
To address all these problems, the company contacted Ares Sun, our partner in Honduras, seeking to stay up to date with modern road safety technology standards and ensure smooth and effective processes. Continue reading to discover how the implemented solution transformed the company's operations, completely eliminating road accidents and significantly reducing operational costs.

Solution

Our partner has developed a comprehensive [fleet management solution](#) where multiple hardware and software elements operate in synergy to ensure efficient monitoring. At the core of this solution is Wialon, a robust system that manages the installed devices and provides real-time information on unit events and statuses. The implementation relied on a wide selection of Wialon features, including reports, geofences, driver tracking, and notifications, among others. Additionally, [Wialon's solution for delivery fleet management](#) was implemented to automate route creation and schedule assignments, significantly reducing the time and effort needed for manual planning.

The vehicles were equipped with the [Galileosky 7x GPS trackers](#), which function as the main system controller, integrating multiple features for seamless vehicle management. The device gathers critical data, acts as CAN bus information receiver and controls peripheral systems such as AI cameras, speed horns, and notification speakers.

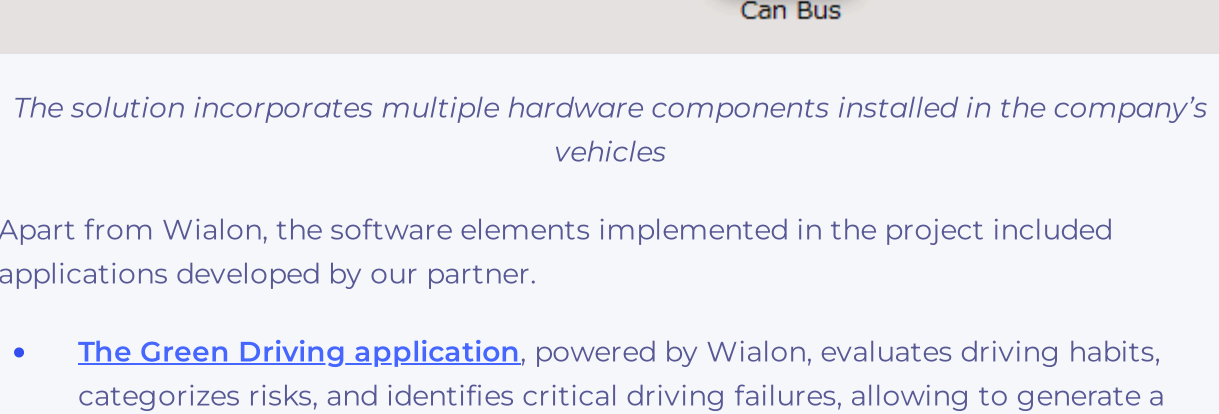
AI-equipped cameras were installed to monitor the interiors and exteriors of vehicles. This provided both real-time and recorded data to identify distractions, reconstruct accidents, and analyze critical events. The **notification speaker** was added to each vehicle's cabin to deliver timely audio alerts to drivers about speed limits, hazardous zones, and road conditions, ensuring they stay informed and focused.



The cameras monitor both the interior and exterior of the vehicle, enabling a comprehensive analysis of driver behavior and road events

The system also includes a **speed horn** to enforce speed compliance, emitting a continuous alert if limits are exceeded until the driver corrects their speed. The CAN bus reader provides real-time insights into vehicle performance, including fuel consumption, engine RPM, and temperature, optimizing maintenance and operation.

To ensure that only authorized personnel can operate vehicles, a **driver identification system** was implemented, managed through an RFID system linked to an ignition lock. In emergencies, an ignition bypass system ensures the vehicle remains operational without delays, minimizing fines and downtime. Additionally, a **weight sensor mechanism** was installed to the passenger seat to detect unauthorized passengers or stowaways, immediately notifying the monitoring team to maintain compliance with company policies.



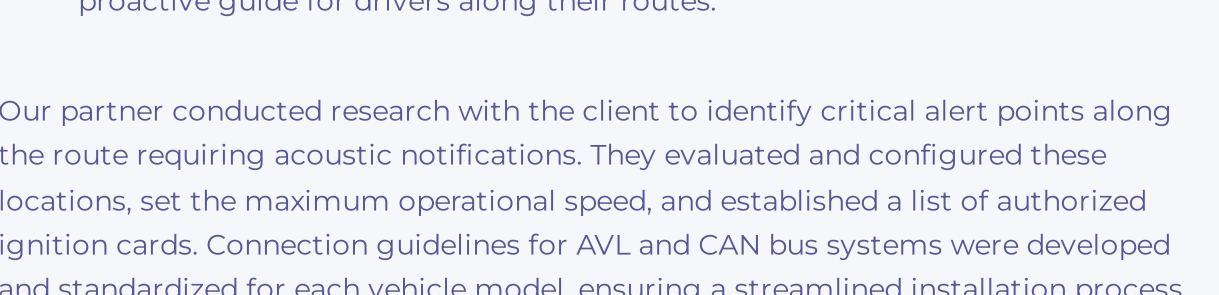
The solution incorporates multiple hardware components installed in the company's vehicles

Apart from Wialon, the software elements implemented in the project included applications developed by our partner.

- [The Green Driving application](#), powered by Wialon, evaluates driving habits, categorizes risks, and identifies critical driving failures, allowing to generate a driver scoring system based on client-defined parameters.

- [The NAS App](#) enhances operational workflows by fine-tuning notifications to align with the company's specific preferences.

- [The Driving Time application](#), powered by Wialon, enables comprehensive tracking of vehicle operation periods, identifying driving and idle times, and enforcing compliance with rest and work duration regulations.



This application enables users to track the driving and idle time of multiple units within a selected period

- [The Accident Recreation](#) feature captures detailed tracking data for reconstructing accidents, offering in-depth insights into vehicle behavior during incidents.
- [The Acoustic Travel Companion](#) provides pre-configured audio alerts for critical zones such as urban areas, school zones, and hazardous curves, acting as a proactive guide for drivers along their routes.

Our partner conducted research with the client to identify critical alert points along the route requiring acoustic notifications. They evaluated and configured these locations, set the maximum operational speed, and established a list of authorized ignition cards. Connection guidelines for AVL and CAN bus systems were developed and standardized for each vehicle model, ensuring a streamlined installation process.

Staff training focused on system oversight, beginning with Wialon and progressing to other applications such as Green Driving, NAS App, and Driving Time. Custom reports were created to display key vehicle data, and ongoing support is available to ensure seamless operation.

Results

The implemented procedures created a comprehensive and reliable monitoring system that significantly enhanced safety, regulatory compliance, and operational efficiency.

Accident prevention

No incidents were reported on routes after system installation across the company's fleets.

Safer vehicle operation

Acoustic alerts enabled drivers to adjust their actions immediately when approaching critical zones, leading to a noticeable and immediate improvement in driving behavior.

Driver evaluation

The scoring system and passenger identifier effectively detected drivers who failed to comply with road regulations.

Operational cost savings

The system identified idle zones, excessive idling times, and over-revved engines, reducing fuel consumption and lowering operational costs.

Automatic driver assignment in Wialon

This feature streamlines operations by automatically assigning drivers to units, saving time and enhancing control through detailed management and monitoring reports.

Company profile

IoT project of the year nomination: Growing fleets

Country: Honduras

Industry: Long-haul transportation

Website: ares-telemetrics.com

Solutions

Wialon

Delivery fleet management

Hardware

Galileosky 7x

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