Case Study

Empowering a Contractor to Deliver IoT Solutions for Railways

Overview

A contractor approached us with an opportunity to offer an IoT solution to the railways, enabling better monitoring and management of critical conditions across their fleet. By integrating temperature, pressure, and water level sensors into our IoT platform, we helped the contractor deliver a cutting-edge, cost-effective solution that not only streamlined railway operations but also provided a scalable, profitable business opportunity.

Challenge

Railways faced multiple challenges that impacted efficiency and customer satisfaction:

- **Temperature Monitoring:**
  Railways needed a reliable way to monitor axle wheel temperatures to prevent overheating.

- **Pressure Management:**
  Brake pressure was critical, and manual checks were labor-intensive.

- **Water Level Monitoring:**
  Water tanks for passenger services needed frequent manual inspections, resulting in high operational overhead and delays in filling up tanks.

The contractor wanted to deliver a solution that allowed real-time monitoring of these parameters, helping the railways proactively address issues and reduce operational costs.
However, a cost-effective, scalable IoT solution that could fit under railway carriages was a challenge.

Solutions

We provided a comprehensive IoT solution by integrating three key sensors—temperature, pressure, and water level (hydrostatic)—into our IoT platform. The contractor's requests were fully addressed, allowing the railways to monitor critical parameters in real time, with alerts and data available from any location via mobile or desktop apps.

Key elements of our solution included:

- **Real-Time Monitoring:**
  Our platform enabled the railways to monitor the temperature of axle wheels, brake pressure, and water levels from a central office, using both mobile and desktop applications. This significantly reduced the burden on their operational teams.

- **Custom IoT Hardware:**
  Since we design and manufacture our own IoT hardware, we customized the form factor to fit neatly under railway carriages. Additionally, we modified the hardware's power supply and battery systems based on the specific needs of the railways.

- **White Labelling:**
  To enhance the contractor's brand presence, we offered white labelling options for both the IoT app and the hardware. This allowed the contractor to present the entire solution as their own, helping them build their business and credibility with the railways.

- **Rapid Sensor Integration:**
  Using standard device protocols, we integrated all sensors into our platform within days. This allowed the contractor to quickly offer the railways a working prototype and move toward full-scale implementation.

- **Cost-Effective IoT Solution:**
  A critical advantage was our ability to provide a cost-effective IoT gateway solution, eliminating the need for expensive LoRaWAN gateways for each train. This was particularly important, as the cost of implementing a LoRaWAN solution for each train would have been prohibitive.

Results

The IoT solution provided tangible benefits for the railways and positioned the contractor as a valuable partner in their modernization efforts:

- **Proactive Monitoring:**
  Railways could now remotely monitor axle wheel temperatures, brake pressure, and water levels, allowing them to act before any issues arose, improving safety and reducing operational delays.

- **Operational Efficiency:**
  The automated monitoring system significantly reduced the workload on railway staff, freeing up resources for other tasks and reducing manual errors.

- **Reduced Customer Complaints:**
  With real-time water level monitoring, railways could ensure tanks were filled proactively, reducing customer complaints due to water shortages on trains.

- **Lower Costs:**
  The contractor was able to deliver a cost-effective solution that saved the railways money in terms of equipment costs and ongoing operational efficiency. Since our IoT platform and hardware eliminated the need for costly LoRaWAN gateways, the solution was affordable and scalable.

Conclusion

By leveraging our complete IoT solution—encompassing both hardware and software—the contractor was able to offer the railways a unique, innovative service that addressed their operational challenges. **The cost-effective hardware, customized form factor, and white-labelling capabilities allowed the contractor to create a long-term business relationship with the railways while presenting the solution as their own.**

This case demonstrates how our IoT platform can empower contractors to transform industry opportunities into profitable, scalable solutions—making complex monitoring systems easy and affordable for industries like railways.

Key Highlights

The IoT solution provided tangible benefits for the railways and positioned the contractor as a valuable partner in their modernization efforts:

- **Custom IoT Hardware:** Tailored to railway specifications.

- **Cost-Effective Solution:** Eliminated need for expensive LoRaWAN gateways.

- **White Labelling:** App and hardware branded for the contractor.

- **Proactive Monitoring:** Improved operational efficiency and reduced customer complaints.

Interested in delivering an innovative IoT solution to your industry? Contact us to learn how we can help you scale your business with our cutting-edge IoT platform.