



## Case Study

# BUS MONITORING SYSTEM DEVELOPMENT



 Visit our website:  
[www.luvina.net/en](http://www.luvina.net/en)



# PROJECT OVERVIEW

## ABOUT CUSTOMER

Our client is a leading corporation in developing technology systems for public transportation in Japan, offering solutions like Automated Toll Systems and Traffic Management Systems, among others. Headquartered in Japan, they have also expanded their global presence with facilities across the Americas, Europe, and other regions.



## CUSTOMER'S CHALLENGES

**Challenges in System Implementation:** Businesses, that are clients of our customer, need tailored solutions to meet their unique requirements, which makes rolling out a standardized service and structure across multiple clients quite challenging.

**High Infrastructure Costs:** Each client currently operates on an independent infrastructure connected via VPN, leading to substantial server maintenance costs (ranging from \$100 to \$280 per month).

These obstacles, despite the client's high-performance system, result in significant operational expenses and slow adaptation to new demands, making it harder for them to expand their business and serve smaller firms efficiently.

## CUSTOMER'S REQUIREMENT

The client sought to **develop a web-based monitoring and operation system for buses**, accessible on both PC and mobile platforms, catering to both bus companies and passengers.

They also requested Luvina's expertise in providing solutions to **reduce operational costs and optimize software system maintenance.**



# PROJECT OVERVIEW

## LUVINA'S SOLUTIONS

- **Thorough Business Analysis and System Visualization:**

Based on the client's initial requirements, Luvina conducted thorough research and business analysis to create BPMN (Business Process Modeling Notation) documents, screen flow diagrams, and a list of proposed system functions. From these materials, the development team built a system demo, allowing the client to better visualize the system and refine their requests with greater detail than initially anticipated.

- **Infrastructure and Software Architecture Consultation:**

Luvina proposed an optimized operational architecture to reduce costs. At the same time, we designed a clear and streamlined software architecture to facilitate easier maintenance and future system expansion.

## STRATEGY

- **Refining Requirements with the Client:**

Initially, the client had no detailed requirements for the upcoming software system. Luvina partnered closely with them, from creating the first demos to continuously adjusting the specifications. Together, we refined the software design to meet the client's expectations in terms of functionality, interface, and efficient operations, all while ensuring cost optimization and ease of maintenance.

# PROJECT OVERVIEW

## ACHIEVEMENTS

- ✓ Within just 4 months, Luvina helped the client complete the development of a bus monitoring and operations system. This resulted in the creation of a reusable software architecture document for similar systems, enabling the client to save up to 70% of the time needed to develop similar products.
- ✓ We helped the client reduce operational costs by up to 40% by solving their infrastructure challenges.

The client highly appreciated the team's capabilities and expressed their desire to continue collaborating with Luvina on future projects.

### Technical Performance

5.0 ★★★★★

### Project Timeline and Execution Process

5.0 ★★★★★

### Consulting Capabilities

4.0 ★★★★★



# KEY FEATURES

## Function: Vehicle Monitoring Management - ADMIN (WEB)

- Users: Bus company staff
- Device: Web (PC)

### Features:

#### Export Operation Results:

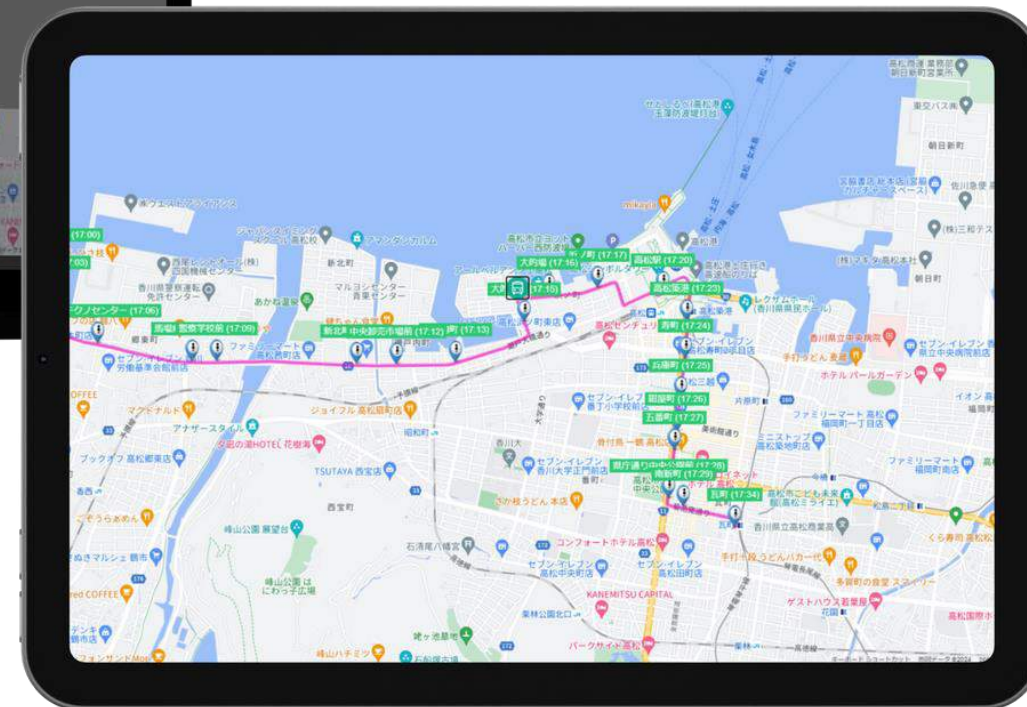
- Daily, monthly reports

#### Vehicle Monitoring

- Display vehicle list and map view
- Vehicle details, Bus Stop details

#### Master Maintenance

- Register master data
- Set vehicle dispatch schedules
- Edit routes, vehicles, and on-board devices
- User management



# TECHSTACK

- **Infrastructure:** Using cloud AWS services



- **GitLab:** CI/CD, auto Deploy + sonar check

- **Programming language:**



- **Google:** Google map API, Google transit api

# THANK YOU For Your Interest

Contact us for more information at:

 [info@luvina.net](mailto:info@luvina.net)

