

GPS TRACKING WEBSITE INFORMATION ON THE BENGKALIS RORO FLEET

Name : Rido Andre Sahrizal
Student ID Number : 6404211077
Supervisor : Mansur, M.Kom,
Muhammad Ridho Nosa, S.T., M.Kom

ABSTRACT

This study aims to design and develop a GPS Tracking Website Information System for the Bengkalis Ro-Ro Ferry Fleet that is capable of displaying vessel positions in real-time using the GT06N GPS device integrated with a Traccar Server. The system was developed using the Laravel framework, Leaflet Maps API, and the Rapid Application Development (RAD) method to accelerate the development process through continuous user involvement in accordance with the operational needs of the port. Through the integration of the Traccar API, vessel location data such as coordinates, speed, and update time are processed to provide real-time visualization on a digital map and to calculate the Estimated Time of Arrival (ETA). In addition to location monitoring, the system provides an admin panel for managing vessel data, scheduling trips, recording vehicle types and quantities based on categories, and generating recap reports that can be exported in PDF format. The use of a Traccar Server offers full control over data management, improves system security, and ensures better service stability compared to a server. The implementation and testing results show that the system is able to accurately display vessel positions in real-time, calculate arrival time estimates effectively, and assist port operators in managing vehicle data and operational reports. Therefore, this system can enhance the quality of ferry service information at Air Putih and Sei Selari Ports and support more efficient and effective fleet management.

Keywords: GPS Tracking, Roro Ferry, Bengkalis, Traccar Server, GT06N, Laravel, Leaflet, Rapid Application Development, Real-time Monitoring, Estimated Time of Arrival.