

## ABSTRAK

Kecepatan dan akurasi tata kelola aset operasional sangat krusial bagi keselamatan penerbangan di Perum LPPNPI (AirNav Indonesia) Cabang Palembang. Namun, manajemen inventaris saat ini masih menggunakan Microsoft Excel secara terpisah, sehingga memicu risiko *human error*, duplikasi data, lambatnya pencarian barang, dan penundaan laporan bulanan. Penelitian ini bertujuan membangun Sistem Informasi Pengelolaan Data Inventaris Terintegrasi Berbasis Web sebagai solusi digitalisasi penunjang efisiensi operasional perusahaan. Sistem dikembangkan dengan metode *Waterfall* menggunakan PHP 8.1, *framework* Laravel, dan basis data MySQL. Fitur unggulan yang diintegrasikan meliputi pemindaian *QR Code* untuk identifikasi cepat, pelacakan mutasi stok secara *real-time*, dan otomatisasi laporan berformat PDF melalui tiga hak akses (Admin, Staf Keuangan, Pimpinan). Pengujian menggunakan metode *Black Box Testing* menunjukkan seluruh fungsi sistem berjalan 100% valid tanpa *bug*. Implementasi aplikasi ini berhasil memusatkan penyimpanan data, mengeliminasi kesalahan pencatatan, memangkas waktu pelacakan aset secara drastis, serta mempercepat penyajian laporan strategis bagi manajemen guna meningkatkan produktivitas kerja.

**Kata Kunci:** Sistem Informasi Inventaris, Laravel, *QR Code*, *Black Box Testing*, Efisiensi Operasional.

## ABSTRACT

Speed and accuracy in operational asset management are crucial for aviation safety at Perum LPPNPI (AirNav Indonesia) Palembang Branch. However, inventory management currently relies on separate Microsoft Excel spreadsheets, triggering risks of human error, data duplication, slow asset retrieval, and delayed monthly reporting. This study aims to develop a Web-Based Integrated Inventory Data Management Information System as a digital solution to enhance operational efficiency. The system was developed using the Waterfall methodology, built with PHP 8.1, Laravel framework, and MySQL database. High-value features include QR Code scanning for rapid identification, real-time stock mutation tracking, and automated PDF report generation, managed across three user roles (Admin, Finance Staff, and Leader). Black Box Testing results proved that all functional specifications operate 100% validly without bugs. In conclusion, this application successfully centralizes data storage, eliminates recording discrepancies, drastically slashes asset tracking time, and accelerates strategic report generation for management to optimize workflow productivity.

**Keywords:** Inventory Information System, Laravel, QR Code, Black Box Testing, Operational Efficiency.