

ABSTRAK

Pelaksanaan patroli perairan memerlukan pengelolaan data yang terstruktur agar proses *monitoring*, pelaporan, dan pengawasan kegiatan dapat dilakukan secara efektif. Namun, proses administrasi patroli yang masih dilakukan secara manual berpotensi menyebabkan keterlambatan pelaporan, kesulitan *monitoring*, serta kurang optimalnya pengelolaan dokumen patroli. Penelitian ini bertujuan untuk merancang dan membangun aplikasi *monitoring* pelaksanaan patroli perairan berbasis *website* guna mendukung pengelolaan kegiatan patroli secara terintegrasi. Metode pengembangan sistem yang digunakan adalah *Waterfall* yang meliputi tahapan analisis kebutuhan, perancangan sistem, implementasi, pengujian, dan pemeliharaan. Teknologi yang digunakan untuk pengembangan aplikasi ini adalah *PHP*, *HTML*, dan *CSS*. Aplikasi dikembangkan menggunakan *framework Laravel* dengan basis data *MySQL*, sedangkan pengujian sistem dilakukan menggunakan metode *Black Box Testing*. Hasil penelitian berupa aplikasi yang menyediakan fitur pengelolaan data kapal, patroli, SOP, laporan hasil patroli ABK, laporan ANEV, validasi pimpinan, serta *monitoring* progres patroli. Hasil pengujian menunjukkan bahwa seluruh fungsi sistem dapat berjalan sesuai kebutuhan pengguna. Berdasarkan hasil penelitian, aplikasi yang dikembangkan mampu membantu proses pelaksanaan, *monitoring*, dan pelaporan patroli perairan secara lebih efektif, terstruktur, dan terdokumentasi dengan baik sehingga mendukung pengambilan keputusan oleh pimpinan.

Kata Kunci: *monitoring* patroli, patroli perairan, SOP patroli, *Laravel*, sistem informasi

ABSTRACT

Conducting maritime patrols requires structured data management to ensure that monitoring, reporting, and oversight of activities can be carried out effectively. However, the fact that patrol administration is still handled manually has the potential to cause delays in reporting, difficulties in monitoring, and suboptimal management of patrol documents. This study aims to design and develop a web-based application for monitoring maritime patrol operations to support the integrated management of patrol activities. The Waterfall model was used for system development, which includes the stages of requirements analysis, system design, implementation, testing, and maintenance. The technologies used to develop this application are PHP, HTML, and CSS. The application was developed using the Laravel framework with a MySQL database, while system testing was conducted using the Black Box Testing method. The result of this research is an application that provides features for managing vessel data, patrols, SOPs, crew patrol reports, ANEV reports, management validation, and patrol progress monitoring. The test results show that all system functions operate in accordance with user requirements. Based on the research findings, the developed application is capable of facilitating the implementation, monitoring, and reporting of maritime patrols in a more effective, structured, and well-documented manner, thereby supporting decision-making by management.

Keywords: patrol monitoring, maritime patrols, patrol SOPs, Laravel, information system