ABSTRACT

The Directorate General of Customs and Excise faces a high risk of information security threats, which can disrupt operations and reduce public trust. The current information security evaluation process, conducted using Excel, has limitations in terms of efficiency, scalability, and data management for large-scale institutions. Therefore, a technology-based solution is needed to address these challenges and support better information security governance.

The Information Security Index (Indeks KAMI) is a recommended tool for evaluating the maturity level of information security, ideally conducted twice a year. A web-based implementation of Indeks KAMI enhances the efficiency of the evaluation process, measures the success of improvement initiatives, and supports the adoption of international security standards such as SNI ISO/IEC 27001.

This study develops a web-based information security evaluation system using the Laravel framework for the backend and PHP, HTML, CSS, and JavaScript for the frontend. The system replaces the Excel-based method with automated features such as respondent data management, assessment completion based on Indeks KAMI parameters, automatic score calculation, and evaluation result visualization through graphical reports. The system development follows the Software Development Life Cycle (SDLC) using the Waterfall approach, which includes requirement analysis, system design, implementation, and system testing using the Black Box Testing method.

Evaluation results show that the proposed system supports a more efficient and standardized information security assessment process. The Directorate of Customs and Excise Information achieved a score of 718 with a basic framework compliance level, indicating a significant improvement in information security governance. The developed system provides a practical solution to enhance the effectiveness and efficiency of information security evaluations.

Keywords: KAMI index, information security, web-based evaluation, ISO/IEC 27001, Laravel