ABSTRACT

Product surveillance in the digital era demands an efficient and reliable field data collection process. The existing digital survey system at a supervisory agency in Indonesia faced critical operational obstacles, particularly with its non-integrated camera functionality, alongside issues of data synchronization failures and application instability. These inefficiencies, coupled with manual input of Distribution Permit Numbers (NIE), increased the risks of data loss and human error. This research aims to develop and optimize a field survey application on the CSEntry platform with a primary focus on designing an integrated camera functionality equipped with an automatic photo compression and storage system. The development method used is Iterative Incremental, facilitating a gradual and adaptive implementation of features. In addition to the camera feature, the solution also enhances the workflow with QR Code scanning for NIE entry and interactive GPS coordinate retrieval. The application's reliability and functional performance, especially of the camera module, were systematically validated through black-box testing across various Android device variations. The test results showed that all test scenarios were successful (PASS) on all devices, proving that the developed application prototype is technically stable and compatible. The integrated camera feature proved reliable in overcoming documentation issues, while the application as a whole was designed and functionally validated to address data loss and synchronization failures. This new application demonstrates significant potential to improve efficiency, accuracy, and reliability in the product surveillance data collection process in the field.

Keywords: *CSEntry, Mobile Data Collection, Iterative Incremental, Black-Box Testing, Integrated Camera, Image Compression, Digital Survey.*