

## ABSTRAK

Dalam rangka meningkatkan kinerja dan efisiensi proses pengujian di bidang perkeretaapian maka Balai Pengujian Perkeretaapian menerapkan transformasi digital dalam proses pengujian yaitu dengan mengimplementasikan Sistem Informasi Aplikasi Pengujian Perkeretaapian (SIAPKA) sejak 2023. Penelitian ini bertujuan untuk menganalisis kinerja SIAPKA menggunakan pendekatan Importance Performance Analysis (IPA), serta memberikan rekomendasi pengembangan berdasarkan karakteristik kualitas perangkat lunak menurut standar ISO/IEC 25010:2011.

Metode penelitian ini menggabungkan pendekatan kualitatif dan kuantitatif dalam pelaksanaan pengumpulan data penelitian yaitu melakukan *focus group discussions* (FGD) dan pengisian kuesioner responden yang terdiri dari pegawai BPP dan penguji perkeretaapian. Penilaian dilakukan terhadap delapan karakteristik dan 31 sub-karakteristik pada ISO/IEC 25010:2011, untuk kemudian di analisa kriteria yang perlu mendapatkan perbaikan berdasarkan pendekatan IPA.

Berdasarkan hasil analisa dari penelitian ini didapatkan untuk tingkat kinerja SIAPKA secara keseluruhan belum memenuhi harapan kinerja dari penggunanya, nilai gap keseluruhan didapatkan sebesar -0,31 atau sebanding dengan 92,70%, dan hanya 4 kriteria yang telah memenuhi harapan pengguna yaitu *Availability*, *Confidentiality*, *Authencity* dan *Installability*. Selanjutnya untuk hasil Importance Performance Matrix (IPM) pada kuadran I (prioritas tinggi) menunjukkan bahwa beberapa atribut, seperti *Functional Completeness*, *Time behaviour*, *Interoperability*, *User error protection*, *Maturity*, *Recoverability*, *Accountability* memerlukan perbaikan segera. Selanjutnya berdasarkan hasil diskusi penulis memberikan rekomendasi untuk pengembangan perbaikan pada siapkan untuk dapat meningkatkan efektifitas dan efisiensi proses pengujian perkeretaapian.

**Kata Kunci:** Sistem Informasi, Pengujian Perkeretaapian, *Importance Performance Analysis* (IPA), ISO/IEC 25010:2011.

## ***ABSTRACT***

*In order to improve the performance and efficiency of the testing process in the railway sector, the Railway Testing Center has implemented digital transformation in the testing process, namely by implementing the Railway Testing Application Information System (SIAPKA) since 2023. This study aims to analyze the performance of SIAPKA using the Importance Performance Analysis (IPA) approach, as well as provide development recommendations based on software quality characteristics according to the ISO/IEC 25010:2011 standard..*

*The research methodology combines qualitative and quantitative approaches in data collection through focus group discussions (FGDs) and questionnaires completed by respondents, including BPP employees and railway testers. The assessment was conducted on eight characteristics and 31 sub-characteristics of ISO/IEC 25010:2011, which were then analyzed to determine criteria requiring improvement based on the IPA approach.*

*The analysis results indicate that the overall performance of SIAPKA has not yet met user expectations, with an overall gap score of -0.31 or equivalent to 92.70%. Only four criteria met user expectations: Availability, Confidentiality, Authenticity, and Installability. Furthermore, the Importance Performance Matrix (IPM) results in Quadrant I (high priority) showed that several attributes, such as Functional Completeness, Time Behavior, Interoperability, User Error Protection, Maturity, Recoverability, and Accountability, require immediate improvement. Based on these findings, the authors provide recommendations for development improvements in SIAPKA to enhance the effectiveness and efficiency of railway testing processes.*

*Keywords: Information System, Railway Testing, Importance Performance Analysis (IPA), ISO/IEC 25010:2011.*