

ANALISIS DAN PERANCANGAN SISTEM INFORMASI MANAJEMEN BAN PROTOTIPE MENGGUNAKAN METODE *WATERFALL* PADA PT. EVOLUZIONE TYRES

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ABSTRAK

Pengelolaan data ban prototipe pada Tim Industrialisasi Departemen Teknologi PT. Evoluzione Tyres masih dilakukan secara tersebar sehingga menyebabkan kesulitan dalam pelacakan progres, penyusunan laporan, dan menjaga konsistensi data. Penelitian ini bertujuan menganalisis sistem yang berjalan serta merancang prototipe Sistem Informasi Manajemen Ban Prototipe berbasis *web*. Penelitian menggunakan metode *Waterfall* dengan analisis proses bisnis dan *PIECES framework* untuk mengidentifikasi permasalahan dan kebutuhan sistem. Tahap perancangan meliputi arsitektur sistem, pemodelan UML, perancangan basis data, dan antarmuka pengguna. Hasil penelitian berupa prototipe yang mengintegrasikan pengelolaan *Prototype Plan*, proses *Building*, *Curing*, dan *Finishing*, pemantauan progres, pelaporan, serta pengendalian akses berdasarkan peran pengguna. Pengujian menggunakan Black Box Testing dan User Acceptance Testing menunjukkan bahwa seluruh fungsi sistem berjalan sesuai kebutuhan dan dapat diterima oleh pengguna, sehingga prototipe yang dihasilkan dapat menjadi dasar bagi implementasi dan pengembangan sistem lebih lanjut.

Kata Kunci: Ban Prototipe, Keterlacakan, *PIECES*, Sistem Informasi Manajemen, *Waterfall*

***ANALYSIS AND DESIGN OF A PROTOTYPE TIRE MANAGEMENT
INFORMATION SYSTEM USING THE WATERFALL METHOD AT PT.
EVOLUZIONE TYRES***

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ABSTRACT

Prototype tyre data management within the Industrialization Team of the Technology Department at PT. Evoluzione Tyres is still conducted in a fragmented manner, resulting in difficulties in progress tracking, report generation, and maintaining data consistency. This study aims to analyze the existing system and design a web-based Prototype Tyre Management Information System prototype. The study employed the Waterfall method, supported by business process analysis and the PIECES framework to identify system problems and requirements. The design stage included system architecture, UML modeling, database design, and user interface design. The study resulted in a prototype integrating Prototype Plan management, Building, Curing, and Finishing processes, progress monitoring, reporting, and role-based access control. Evaluation using Black Box Testing and User Acceptance Testing demonstrated that all system functions operated according to user requirements and were accepted by users, indicating that the developed prototype can serve as a foundation for future system implementation and development.

Keywords: *Management Information System, PIECES, Prototype Tyre, Traceability, Waterfall*