

**DEVELOPING A REAL TIME HEAVY EQUIPMENT MONITORING
SYSTEM IN INDONESIAN COAL MINING COMPANIES**

By

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BACHELOR'S DEGREE
in

INDUSTRIAL ENGINEERING
FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY



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Revision after Thesis Defense on July 11st 2022

STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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The problem discussed in the development of this information system is how the manual recording (time sheet) is carried out by the operator, namely production data information in the form of vehicle code, vehicle type, operator name, vehicle location, vehicle hours meter, job status in the form of number of trips and total load (payload) on heavy equipment production in open-pit coal mines located in Indonesia becomes a real time monitoring system recording which will automatically record the production data to avoid recording errors (human error) in order to meet work effectiveness in order to help improve production achievement.

Information system development is carried out by analyzing running business processes before and after implementation in order to obtain the requirements, requirements (System Requirement Specification) for Hardware (Hardware) and Software (Software) to testing (User Acceptance Test) whether the results are running well in accordance with what the user wants.

This Information System development method uses the Waterfall method, Software Development Life Cycle (SDLC).

The results showed that there was an increase in the amount of overburden production per month and a decrease in production costs by 11%.

Keywords: Information System Development, Real Time Monitoring System, Heavy Equipment, Open-pit Coal Mining, Waterfall Methodology, Software Development Life Cycle (SDLC).

ABSTRAK

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Permasalahan yang dibahas dalam pengembangan sistim informasi ini adalah bagaimana pencatatan manual (*time sheet*) yang dilakukan oleh operator yaitu informasi data produksi berupa kode kendaraan, tipe kendaraan, nama operator, lokasi kendaraan, *hours meter* kendaraan, status pekerjaan berupa jumlah *ritase* dan jumlah muatan (*payload*) pada alat berat produksi di tambang batubara terbuka (*open-pit*) yang berlokasi di Indonesia menjadi pencatatan secara *real time monitoring system* yang secara otomatis akan mencatat data produksi tersebut untuk menghindari kesalahan pencatatan (*human error*) guna memenuhi efektivitas kerja dalam rangka membantu meningkatkan pencapaian produksi.

Pengembangan sistim informasi dilakukan dengan menganalisa proses bisnis berjalan sebelum dan sesudah dilakukannya implementasi guna mendapatkan persyaratan, kebutuhan (*System Requirement Specification*) atas Perangkat keras (*Hardware*) dan Perangkat lunak (*Software*) sampai dengan pengujian (*User Acceptance Test*) apakah hasilnya berjalan dengan baik sesuai dengan yang diinginkan oleh pengguna (*user*).

Metode pengembangan Sistim Informasi ini menggunakan metode *Waterfall*, *Software Development Life Cycle (SDLC)*.

Hasil penelitian menunjukkan bahwa ada peningkatan jumlah produksi overburden perbulan dan menurunkan biaya (*cost*) produksi sebesar 11%.

Kata kunci: Pengembangan Sistim Informasi, Real Time Monitoring System, Alat Berat, Tambang Batubara terbuka (Open-pit), Metodologi Waterfall, Software Development Life Cycle (SDLC).

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LEMBAR PERSEMBAHAN

Puji Syukur penulis panjatkan kepada Allah SWT, yang telah memberikan kesehatan, rahmat dan hidayah. Karya ini saya dedikasikan untuk kedua orang tua saya yang selalu mendoakan agar selalu diberikan kelancaran dalam belajar dan ujiannya. Untuk istri dan anak-anak ku tercinta yang selalu mendukungku.

PENGHARGAAN

Saya mengucapkan terima kasih kepada Bapak/Ibu Management PT United Tractors Tbk di Head Office tempat saya bekerja yang telah memfasilitasi dan memberikan saya kesempatan untuk mengambil gelar Sarjana ini & Rekan-rekan kerja di Jobsite Batukajang tempat implementasi skripsi ini. Serta Rekan-rekan Mahasiswa SGU Bridging Program Cooperation with United Tractors (IE-UT), terima kasih kalian luar biasa.

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