ABSTRAK

Keandalan jaringan telekomunikasi merupakan hal krusial yang terikat secara mutlak pada *Service Level Agreement* (SLA). Di PT PLN Icon Plus SBU Regional Sumatera Bagian Selatan (SBS), proses penugasan teknisi lapangan untuk menangani gangguan masih dilakukan secara manual dan intuitif. Praktik ini sering kali memicu rute perjalanan yang tumpang tindih (*backtracking*) dan mengabaikan tiket dengan waktu tunggu (*aging*) yang kritis karena teknisi cenderung memilih lokasi terdekat terlebih dahulu. Penelitian ini bertujuan untuk mengimplementasikan algoritma skoring yang dapat mengotomatisasi penentuan prioritas eksekusi tiket gangguan berdasarkan kalkulasi waktu tunggu dan jarak tempuh jalan raya aktual. Sistem otomasi *dispatch* ini dirancang berbasis web menggunakan bahasa pemrograman Python dengan *framework* FastAPI yang sangat efektif menangani komputasi asinkron. Proses penentuan prioritas diotomatisasi menggunakan algoritma *Simple Additive Weighting* (SAW) yang mengkalkulasi variabel waktu tunggu sebagai kriteria *benefit* (bobot 0,6) dan variabel jarak aktual yang diekstraksi dari antarmuka *Open Source Routing Machine* (OSRM) sebagai kriteria *cost* (bobot 0,4). Hasil perhitungan ini menghasilkan antrean cerdas (*Smart Queue*) yang divisualisasikan secara spasial menjadi rute navigasi menggunakan pustaka *Leaflet.js*. Sistem dikembangkan menggunakan metodologi *Rational Unified Process* (RUP) dan divalidasi melalui pengujian *Black-Box* dengan tingkat keberhasilan penuh (100%). Pada akhirnya, sistem berhasil meniadakan penugasan berbasis intuisi manual, mencegah terjadinya rute *backtracking*, serta secara optimal meminimalisasi risiko pelanggaran batas waktu SLA.

Kata Kunci: Dispatch Gangguan, *Service Level Agreement* (SLA), *Simple Additive Weighting* (SAW).

ABSTRACT

The reliability of telecommunication networks is a crucial matter strictly bound to the Service Level Agreement (SLA). At PT PLN Icon Plus SBU Regional Sumatera Bagian Selatan (SBS), the process of dispatching field technicians to handle network disruptions is still done manually and intuitively. This practice often triggers overlapping travel routes (backtracking) and neglects tickets with critical waiting times (aging) because technicians tend to prioritize the closest locations first. This study aims to implement a scoring algorithm that can automate the priority determination of disruption ticket execution based on the calculation of waiting time and actual road travel distance. This web-based automated dispatch system is designed using the Python programming language with the FastAPI framework, which is highly effective in handling asynchronous computations. The priority determination process is automated using the Simple Additive Weighting (SAW) algorithm, which calculates the waiting time variable as a benefit criterion (weight 0.6) and the actual distance variable extracted from the Open Source Routing Machine (OSRM) interface as a cost criterion (weight 0.4). The results of this calculation generate a Smart Queue that is spatially visualized into navigation routes using the Leaflet.js library. The system was developed using the Rational Unified Process (RUP) methodology and validated through Black-Box testing with a full success rate (100%). Ultimately, the system successfully eliminated manual intuition-based assignments, prevented backtracking routes, and optimally minimized the risk of SLA time limit violations.

Key Words: Disruption Dispatch, Service Level Agreement (SLA), Simple Additive Weighting (SAW).