

INTISARI

RANCANG BANGUN SISTEM DOKUMENTASI *REASON FOR OUTAGE* OTOMATIS BERBASIS BOT TELEGRAM DAN POSTGRESQL CLOUD

Fadza Dzikrian Ardhiansyah

22/494386/SV/20796

Operasional tim Helpdesk PT. Comtelindo dalam dokumentasi *Reason for Outage* (RFO) masih mengandalkan proses manual melalui *Microsoft Word* yang memerlukan waktu lama dan rentan terhadap inkonsistensi format. Untuk mengatasi tantangan tersebut, penelitian ini mengembangkan sistem otomasi dokumentasi RFO berbasis *Telegram Bot* dengan *conversational flow* yang memandu pengguna melalui lima tahap pengisian data. Sistem dibangun menggunakan Python dengan *library python-telegram-bot*, *database* PostgreSQL melalui Supabase, API berbasis Flask, serta *dashboard* web untuk monitoring dan visualisasi data *real-time*. Arsitektur modular memungkinkan integrasi komponen berjalan dengan tingkat integritas data 100%. Pengujian mencakup validasi fungsional, pengujian performa, serta evaluasi *Quality of Service* (QoS) berdasarkan standar ISO/IEC 25010:2023 dengan parameter *throughput*, *latency*, dan *reliability*. Hasil pengujian menunjukkan sistem mencapai *throughput* 9.6 docs/min (kategori Cukup), *latency* 641.52 ms (kategori Bagus), dan *reliability* 92.63% (kategori Cukup) yang melampaui standar minimum kualitas nilai 70. Sistem berhasil mereduksi waktu dokumentasi dari proses manual beberapa menit menjadi 15.29 detik per dokumen, memvalidasi bahwa pendekatan otomasi berbasis *chatbot* efektif meningkatkan efisiensi operasional tim *Helpdesk* dalam dokumentasi gangguan jaringan telekomunikasi.

Kata kunci: Telegram Bot, Reason For Outage, PostgreSQL, Flask API, Quality of Service, ISO/IEC 25010, Otomasi Dokumentasi, Conversational Chatbot, Helpdesk Automation

ABSTRACT

DESIGN AND IMPLEMENTATION OF AN AUTOMATED REASON FOR OUTAGE DOCUMENTATION SYSTEM BASED ON TELEGRAM BOT AND CLOUD POSTGRESQL

Fadza Dzikrian Ardhiansyah

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PT. Comtelindo's Helpdesk team operations in Reason for Outage (RFO) documentation still rely on manual processes through Microsoft Word, which require significant time and are prone to format inconsistencies. To address these challenges, this research developed an automated RFO documentation system based on Telegram Bot with conversational flow that guides users through five data entry stages. The system was built using Python with python-telegram-bot library, PostgreSQL database through Supabase, Flask-based API, and web dashboard for real-time data monitoring and visualization. The modular architecture enables component integration with 100% data integrity. Testing encompassed functional validation, performance testing, and Quality of Service (QoS) evaluation based on ISO/IEC 25010:2023 standards with throughput, latency, and reliability parameters. Test results demonstrate the system achieves throughput of 9.6 docs/min (Fair category), latency of 641.52 ms (Good category), and reliability of 92.63% (Fair category) exceeding the minimum quality standard of 70. The system successfully reduced documentation time from manual process of several minutes to 15.29 seconds per document, validating that chatbot-based automation approach effectively improves Helpdesk team operational efficiency in telecommunication network outage documentation

Keywords: Telegram Bot, RFO Documentation, PostgreSQL, Flask API, Quality of Service, ISO/IEC 25010, Documentation Automation, Conversational Chatbot, Helpdesk Automation.