

## **ABSTRACT**

**TITLE : NETWORK SCHEDULING  
OPTIMIZATION AT PT. INCASI  
RAYA PADANG USING SIMULATED  
ANNEALING AND FIRST-COME  
FIRST-SERVED (FCFS) METHODS**

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*This research addresses the optimization of network scheduling at PT. Incasi Raya Padang by employing the Simulated Annealing and First Come First Served (FCFS) methods. The study originates from the issue of degraded Wi-Fi signal quality when the number of connected devices exceeds its capacity, which results in reduced network performance. The proposed system aims to improve resource allocation efficiency, minimize human errors, and maintain service stability. The FCFS method is utilized to process connection requests based on their arrival order, providing a simple and easy-to-implement scheduling structure. Meanwhile, the Simulated Annealing algorithm is applied to search for optimal solutions by considering interference factors, load distribution, and data transmission efficiency. Experimental results demonstrate that the combination of these two methods enhances network performance, reduces congestion risks, and provides a more stable and responsive connection scheduling system.*

**Keywords: Network Scheduling, Simulated Annealing, First come First Served (FCFS), MikroTik**

## **ABSTRAK**

**JUDUL : OPTIMASI PENJADWALAN  
JARINGAN PADA PT. INCASI RAYA  
PADANG MENGGUNAKAN  
METODE SIMULATED ANNEALING  
DAN FIRST-COME FIRST-  
SERVED(FCFS)**

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Penelitian ini membahas optimasi penjadwalan jaringan di PT. Incasi Raya Padang dengan memanfaatkan metode Simulated Annealing dan First Come First Served (FCFS). Latar belakang penelitian ini berangkat dari permasalahan penurunan kualitas sinyal Wi-Fi ketika jumlah perangkat yang terhubung melebihi kapasitas, yang berdampak pada penurunan kinerja jaringan. Sistem yang dikembangkan bertujuan meningkatkan efisiensi alokasi sumber daya, mengurangi potensi kesalahan manual, serta menjaga stabilitas layanan. Metode FCFS digunakan untuk memproses permintaan koneksi berdasarkan urutan kedatangan, memberikan struktur penjadwalan yang sederhana dan mudah diimplementasikan. Sementara itu, algoritma Simulated Annealing diterapkan untuk melakukan pencarian solusi optimal dengan mempertimbangkan faktor interferensi, distribusi beban, dan efisiensi transmisi data. Hasil pengujian menunjukkan bahwa kombinasi kedua metode ini mampu meningkatkan kinerja jaringan, meminimalkan risiko kemacetan, serta memberikan jadwal koneksi yang lebih stabil dan responsif.

**Kata kunci: Penjadwalan Jaringan, Simulated Annealing, First Come First Served (FCFS), MikroTik**