

ABSTRACT

Lia Nanda Sari, 2024. ANALYSIS OF SERVICE TIME FOR ELECTRICAL DISTURBANCE HANDLING BY THE STATE ELECTRICITY COMPANY (PLN) USING MAX PLUS ALGEBRA AND PETRI NET METHODS. Undergraduate Thesis. Gorontalo. Study Program of Mathematics, Department of Mathematics. Faculty of Mathematics and Natural Sciences. Universitas Negeri Gorontalo..
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This study integrated the concepts of Max Plus Algebra and Petri Net to determine the optimal time in the system for handling electrical disturbances. Max Plus Algebra is used to analyze the processing time of electrical disturbance handling services, while Petri Net is employed to describe the structure of the electrical disturbance handling service system. By using these two methods, workflow optimization and service efficiency improvements can be achieved. The analysis of the Petri Net flow of the electrical disturbance handling service showed that the Petri Net always exhibits liveness and never encounters deadlocks. The analysis and simulation results of the Max Plus Algebra model indicated that the processing time for handling electrical disturbances through the contact center 123 takes 40 minutes and 59 seconds. For direct service at the office, the processing time was 44 minutes and 26 seconds, while for handling electrical disturbances through the PLN mobile application, the processing time was 39 minutes and 30 seconds.

Keywords: *Max Plus Algebra, Petri Net, Coverability Tree, queuing system, optimal time, State Electricity Company*



LEMBAR PERSETUJUAN PEMBIMBING

**Skripsi yang berjudul "ANALISIS WAKTU PELAYANAN TEKNIK
GANGGUAN LISTRIK OLEH PERUSAHAAN LISTRIK NEGARA (PLN)
DENGAN METODE ALJABAR MAX PLUS DAN PETRI NET"**

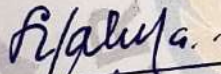
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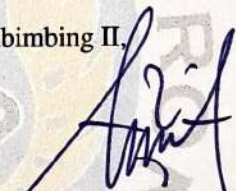
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Pembimbing I

Pembimbing II



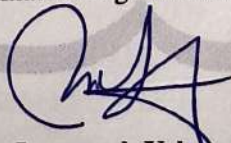
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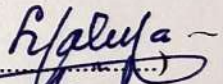
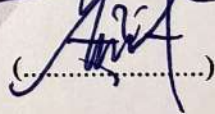
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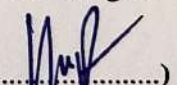
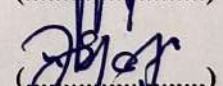
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