

ABSTRACT

Due to the lack of supervision, the Transjakarta route is often entered by private vehicles that are not in line, so the rate of TransJakarta Bus becomes obstructed. Therefore a solution is published to create a simulation of an automatic latch on the TransJakarta line. In another study has been applied automatic barrier system that utilizes *RFID*. However, in the application of this system can cause the accumulation of Bus on the bar so that it is considered ineffective. It was proposed another prototype that uses *Zigbee* as a Bus detector to open an automatic bar. To prove the effectiveness of this prototype with the previous prototype needs to be done comparison. Comparison is done by simulation in which the distribution of each model is exponential. This final assignment will make simulation comparison of automatic barrier system and RFID calculation system using *Matlab* to generate the exact distribution and comparison of both systems. Here are the prototype for automatic barrier and *RFID* barrier in Transjakarta. The barrier will open because there is *Zigbee* sensor on it which is used to open the barrier. The purpose of this final assignment is to generate a simulation comparison of automatic barrier system and *RFID* barrier system. The comparison stated that both system generated *Exponential* Distribution. That distribution generated an error number which stated that automatic barrier system is better than *RFID* barrier system. Therefore, the automatic barrier system in Transjakarta can be a solution for indiscipline drivers on the road which will pass through Transjakarta's track.

Kata kunci : Bus Transjakarta, *Zigbee*, *RFID*, *Matlab*, *Prototype*, *Eksponensial*.