

**AUTOMATIC RAILWAY CROSSING BAR WITH WAITING TIME DISPLAY  
USING GLOBAL POSITIONING SYSTEM**

By

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in

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## STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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## ABSTRACT

### AUTOMATIC RAILWAY CROSSING BAR WITH WAITING TIME DISPLAY USING GLOBAL POSITIONING SYSTEM

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Train accident is one of transportation event. One issue raised was the issue of rail crossings doorstop. Accidents often occur commonly due to negligence of railway crossing bar guard officer. Human errors and technology are often in the spotlight in many cases at railway crossings. Several technology research doorstop automated trains ever done. The purpose of this research is to develop technological research about automatic railway crossing bar. Methods of Research and Development applied this research. This study uses Experimental Design based on R&D method because this research have already exist, but the result still has some shortcomings, thus require a further research. The development from previous research is by adding waiting time display and GPS system. GPS and Infrared Sensor FC-51 is the main sensor to activate the system. The results of this research is in the form of prototype of automatic railway crossing bar with waiting time display. The GPS system is not working properly due to the GPS fluctuation and accuracy. The backup system using Infrared Sensor is working properly.

*Keywords: Prototype, Arduino, GPS, Infrared Sensor, Railway Crossing Bar*



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## **DEDICATION**

I dedicate this works for:

GOD Almighty, Allah Subhanahu Wa Ta'ala

The Future of The Country I loved, Republic of Indonesia

My Father and Mother, Alm. Tofik Priyatno and Suparni

My Future Wife, Diah Wahyuningsih

My Campus, ATMI Cikarang and Swiss German University

All of my Friends that joined as member of cooperation program ATMI - SGU



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The author realized that the completion of this paper is still far from perfect. Therefore, the authors expect suggestions and constructive criticism from readers. And finally, the author expect this thesis can be useful for readers and also the wider community.

Tangerang, 20 January 2017

Bagas Anjar Sadewa

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