

UNIVERSITI TEKNOLOGI MARA

**AUTOMATIC TRAFFIC LIGHT CONTROLLER
FOR EMERGENCY VEHICLE**

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**Thesis submitted in fulfilment of the requirements for
Bachelor of Computer Science (Hons.) Data Communication and
Networking
Faculty of Computer and Mathematical Sciences**

July 2021

ACKNOWLEDGEMENT

Firstly, I wish to thank Allah S.W.T for giving me the opportunity to embark on my degree and for completing this long and difficult journey successfully.

Alhamdulillah, I have been in touch with lot of people, researchers, lecturers, academics, and friends. Special thanks to my supervisor Puan Rosanita Binti Adnan for helping me with this project as well as support, criticism of direction and assistance. I was deeply encouraged by his determination to motivate me and work harder to complete this project. In addition, I would like to thank the authority of the University Teknologi MARA (UiTM) for providing me with a good atmosphere and facilities to complete this project proposal.

Finally, an honourable mention goes to my family and friends, particularly my parents, who have given me all the support from a variety of aspects, such as funds and confidence level, through this journey.

ABSTRACT

Traffic congestion is a problem that had a significant effect on the transport system in our country. This causes a lot of problems, particularly when there are emergency traffic light intersections that are often busy with a lot of vehicles. A traffic light system for emergency vehicle was designed to solve these problems. The system was designed to be operated when a signal was received from the emergency vehicles based on radio frequency (RF) transmission and the programmable Arduino Mega 2560 device that was used to monitor the LED traffic light signal. The use of traffic light LED in this system to help emergency vehicle pass the traffic quickly to reach its destination by clear it path from any vehicles.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

The operation of any traffic light junction is typically designed to achieve maximum throughput and a smooth flow of vehicular traffic. Unfortunately, traffic congestion is unavoidable at times. Many signalling cycles would be required to clear such situations (Nasser Al-Ostath, Zainab Al-Roudhan, Fatma Selityn and Mohammed El-Abd, 2015). Emergency vehicles will be forced to stay in traffic because they do not have the power to change the operation of traffic light signal. This will cause for emergency vehicles take more time to reach its destination. Furthermore, even if there is no heavy traffic, emergency vehicles entering an intersection at a high speed will place all motorist and pedestrians under at high risk.

Emergency vehicles, such as firefighting vehicles, ambulances and police cars, typically need to cross or drive through traffic signal intersections as quickly as possible in order to arrive at the emergency scene in a timely manner. However, emergency vehicles difficult to reach its destination on time because of traffic congestion. Collisions with other vehicles from a different direction could occur at the intersection when the emergency vehicle had to override the red lights (N.M.Z. Hashim, A.S.Jaafar, N.A.Ali, L. Salahuddin, N.R.Mohamad and M.A. Ibrahim, 2018). For saving lives, even seconds can be crucial. It is well known, in fact, that the odds of an emergency victim's survival are greatly improved by the faster pace at which emergency aid is provided. When the emergency response vehicle is delayed by a few minutes, it makes a major difference in saving people's lives in emergency situations. According to Patrick Lane (2018) stated that the more patients get faster treatment in life-threatening situations and more lives are saved.