



# IJRASET

International Journal For Research in  
Applied Science and Engineering Technology



---

# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

---

**Volume:** 11    **Issue:** V    **Month of publication:** May 2023

**DOI:** <https://doi.org/10.22214/ijraset.2023.51798>

[www.ijraset.com](http://www.ijraset.com)

Call:  08813907089

E-mail ID: [ijraset@gmail.com](mailto:ijraset@gmail.com)

# Advanced Traffic Control System for Emergency Vehicle

Linganangouda R<sup>1</sup>, H Prashanth<sup>2</sup>, Pavan S<sup>3</sup>, Thrinethra T<sup>4</sup>, Harish Kumar<sup>5</sup>  
 Department of Electrical Engineering, R.Y.M Engineering College Ballari, Karnataka, India

**Abstract:** Traffic congestion is a severe problem in most of the cities across the world and it has become a nightmare for the citizens. It is caused by delay in signal, inappropriate timing of traffic signal ling etc. The delay of traffic light is hard coded and it does not depends on traffic. Therefore for optimizing traffic control, there is an increasing demand in systematic quick automatic system. This paper is designed to develop a density based dynamic traffic signal control. The signal timing changes automatically on sensing the traffic density at the junction. The microcontroller used in this project is Raspberry Pi. The system contains IR sensors (transmitter and receiver) which will be mounted on the either side of the road on poles. It gets activated and receives the signal as the vehicles passes close by it.

## I. INTRODUCTION

It is an intelligent traffic controlling system. Our present methodology adopted for traffic controlling is based upon the fix timing. Each side has to wait for the fix time and they are allowed to cross the road for the limited fix time. This is feasible during normal traffic

but fails during heavy rush. This wastes the time of commuters as well as increases rushes many folds. This problem can be tackled by adopting traffic monitoring system of vehicles. This uses vehicles density as its tool for measuring the rush on the road. Based up on the calculated density of vehicles the traffic light are being controlled to manage the traffic. It is an intelligent traffic controlling system. Our present methodology adopted for traffic controlling is based upon the fix timing. Each side has to wait for the fix time and they are allowed

to cross the road for the limited fix time. This is feasible during normal traffic but fails during heavy rush. This wastes the time of commuters as well as increases rushes many folds. This problem can be tackled by adopting traffic monitoring system of vehicles. This uses vehicles density as its tool for measuring the rush on the road. Based upon the calculated density of vehicles the traffic light are being controlled to manage the traffic.

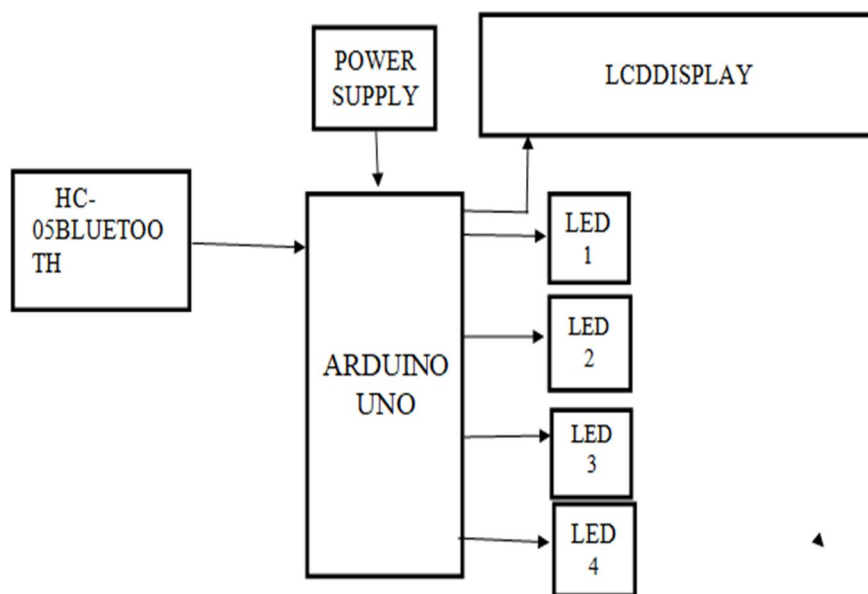


Fig: block diagram of advanced traffic control system for emergency vehicle

## II. RELATEDWORK

Traffic light controller helps to manage the traffic and to maintain proper traffic management. These systems are placed at the intersections of the road or at the crossings to avoid congestions and accidents. The systems indicate to the driver by using different colours of light. Therefore it is simple to avoid congestion at the intersections.

This project is the traffic light controller by using Arduino. It is an electronic project by which we will get knowledge about traffic lights and how they work. This project is the simple version of a traffic light system where we have demonstrated it for three sides or ways.

Roads without any supervision or guidance can lead to traffic conflicts and accidents. Traffic signals are required for an orderly flow of traffic. A traffic signal is used as an instructing device that indicates the road user to act as per the displayed sign.

Traffic lights allow everyone to cross the intersection point one by one, reducing conflicts between vehicles entering intersection points from different directions. It provides road safety, also helps to solve traffic in simple manners.

## III. CONCLUSION

In this project we have studied the optimization of traffic light controller in a city using Arduino. A traffic light system has been designed and developed with proper integration of both the hardware and the software. This interface is synchronized with the whole process of the traffic system. Automatically, this project could be programmed in any way to control the traffic light model and will be useful for planning proper road system.

## REFERENCES

- [1] M.A.A. Parkhi, Mr. A. A. Peshattiwar, Mr.K.G.Pande "Intelligent Traffic System Using Vehicle Density". Yeshwantrao Chavan College of Engg., Nagpur. International Journal of Electrical and Electronic Engineers, 2016.
- [2] Bilal Ghazal, Khaled El Khatib "Smart Traffic Light Control System". Conference Paper- April 2016.
- [3] Dinesh Rotake, Prof. Swapnil Karmore "Intelligent Traffic Signal Control System Using Embedded System". G.H Raison College of Engineering, Nagpur. Innovative Systems Design and Engineering, 2012.
- [4] Malik Tubaihatr, Ti Shang and Hongchi Shi "Adaptive Traffic Light Control with Wireless Sensor Networks". Article January 2007.
- [5] Nang Hom Kham, Chaw Myat New "Implementation of Modern Traffic Light Control System". Department of Electronic Engineering, Mandalay Technological University, Myanmar. International Journal of Scientific and Research Publications, June 2014.
- [6] Khalil M. Yousef, Jamal N. Al-Karaki, Ali M. Shatnawi "Intelligent Traffic Light Flow Control System Using Wireless Sensors Networks". Journal of Information Science and Engineering, May 2010



10.22214/IJRASET



45.98



IMPACT FACTOR:  
7.129



IMPACT FACTOR:  
7.429



# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089  (24\*7 Support on Whatsapp)