

Automatic Ambulance Detection and Gate Control Along with Auto Traffic Control

C. Senthilkumar, N. Akilan, R. Gunasekar and S. Gowtham

Abstract--- In Indian country population is high, Because of this number of two-wheelers and four-wheelers are increasing day by day. For this reason more traffic, more accident on the road. Every year the number of accident numbers are growing; the count of human death is increasing. Most human death occurs because of the Ambulance not reaching on time because of heavy traffic in the Road. For this we created this Project called Automatic ambulance detection to clear a traffic and railway gate is opened in case of Ambulance is detected. The main objective is used to identify the Ambulance, and the control the traffic for providing free path in Road for the Ambulance quickly reaches the hospital. The red signal, in particular, Road, our Project detect the Ambulance and give a green message for the Road and automatic gate control in case of Railway gate. Our Project is based on RF communication. The Ambulance detected in particular Road they will clear the traffic.

Keywords--- Traffic Control, Flow Control, Number of Vehicles.

I. INTRODUCTION

Traffic congestion and tidal current management were identified as key issues. Increasing population flow in India is also increasing rapidly. Therefore, traffic signals must be well coordinated. Emergency time traffic is steady. Road accidents are a regular occurrence in cities and life is prohibited, because accidents are even more important. In this fast-paced world, we force ourselves to make traffic jams and accidents

inevitable. For the ambulance detection system, we automatically open the door with ambulance railway detection and road flow control.

Must see the terrible road congestion problem in its city. The growth in infrastructure is slow due to space and cost constraints compared to the increase in the number of vehicles. In addition, India is a transport base and a non-confusing route. This requires a flow control solution, which is different from developed countries. To understand this problem, the government should encourage people to use public transport or to use small-scale vehicles as personal transport bicycles or taxis. In addition, highways and roads cannot meet the increasing number of vehicles.

It is designed to control road traffic, such as embedded controllers installed at intersections, rather than working on the road to accommodate the increasingly intense traffic of various technologies. Sensor nodes are small and run low on both power consumption and solar cell power for roadside use. They can use sunlight and work in the sun and sun during the night or in cloudy or snowy conditions. The sensors used in the traffic signal system in the wireless sensor network consist mainly of two types of intrusive and intrusive and intrusive sensors, which maintain the road and wait for traffic in the signals object.

This type of sensor has the same operating principle as a metal detector. Intrusive type sensors are installed on the road. This type of sensor is easy to install as it does not require road cutting. Non-aggressive sensors include sound sensors or video image processors to detect vehicles in non-traffic intersections. Although intrusion sensors are very effective, intrusive sensors are still superior to penetration sensors because they are cost effective, easy to install and free from natural erosion and degradation.

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II. LITERATURE REVIEW

Road traffic accident rates are very high today, especially for two-wheelers. Timely medical care can help save lives. The system is designed to alert nearby medical centers and provide immediate medical help [1]. Unexpected is a regular topic in this vehicle driven world; Road safety is still a major concern. Most accidents are not helped as soon as there are delayed information through the Accident Assistance Center [2]. The rapid development of technology and infrastructure has made our lives easier. The emergence of technology has also increased the likelihood of traffic disruptions and frequent traffic accidents caused by the massive loss of lives and property loss of emergency facilities for the poor. We will provide the best solution to this shortcoming [3]. This method proposes a deep learning based Internet of vehicles system, which consists of an in-vehicle infotainment telemetric platform with collisions detection sensors, a cloud based deep learning training server, and a web-based service platform [4]. This project aims in providing a voice alert to the person driving to avoid collision on merging lanes, blind curves and junctions. Safety is the major issue in the recent years. A key goal of Intelligent Transportation System is to provide driving aids to avoid accidents, as the accident rate is increasing continuously which is leading to the loss of human power [5]. Now-a-days as we open the newspaper, we find at least one news of a road accident. With. This occurrence will be immediately communicated to the concerned people so that further action [6]. Automatic vehicle accident detection is a life-saving application that is vital in today's high speed motorways. In case of motorway accidents, notification to the proper authorities must be done efficiently and expediently [7]. This report explains how to use automated monitoring and alert systems to deal with injuries caused by elephant deaths and train accidents. The automated call and tracking system has been implemented by combining GSM and GPS technology with the elephant's body and continuously monitoring the status of animals associated with the GPS limited boundary around the railway line. Auto companies are improving this technology and making a lot of progress. So far the motorcycle has been idle, waiting to reach the peak [9].

Traffic accidents are one of the main causes of sudden death worldwide. Inadequate driver response to z changing road and traffic conditions leads to a higher probability of road accidents. With the rise of the concept of Smart Cities, safety and security are two important issues that need to be addressed [10].

III. PROPOSED METHOD

The working of our proposed system is based on RF communication and RF transmitter is fixed in ambulance. The RF receiver is placed in Road or Traffic signal. While ambulance travelling it will reach the particular road Traffic is blocked. The emergency key pressed the green signal is placed and emergency alarm is activated automatically clear the traffic for ambulance. In case of Railway gate the RF receiver in a gate communicate with RF Transmitter in a ambulance it will automatically open the gate when it will pressed. Using this project we can detect ambulance and control the traffic for ambulance. Our project also control railway gate and it will automatically opened by RF Transmitter and Receiver.

3.1 Proposed Block Diagram

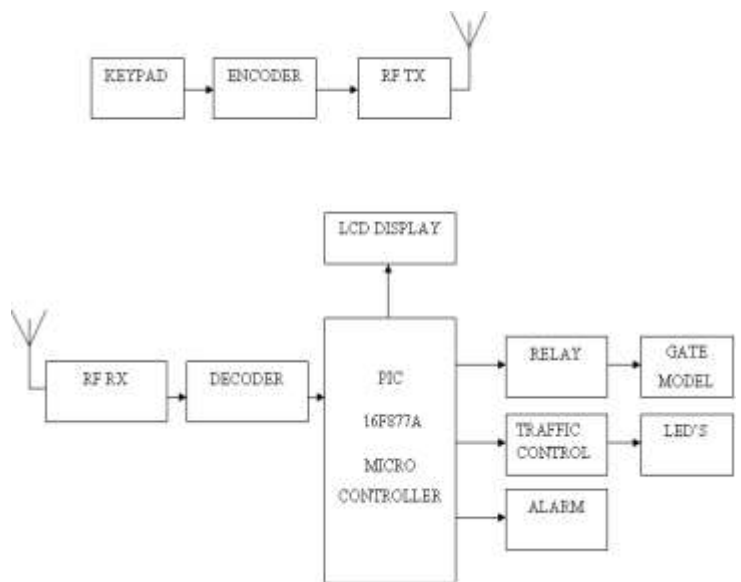


Figure 1: Proposed Block Diagram

3.2 Block Diagram Explanation

Power Supply

Almost all electric power is generated, transmitted and

distributed in the form of AC for economic reasons, but for the operation of most electronic equipment and circuits, a DC power supply is required. Dry batteries and battery packs can be used for this purpose. There is no doubt that they have the advantages of being small and not ripple, but their low voltage, they need to be replaced frequently, and they are expensive compared to traditional DC power lines. Nowadays,

almost all electronic devices have circuits that convert AC power into DC power. It converts the alternating current into direct current as part of the DC power supply. There is usually a transformer in the power input. It is followed by a filter with a rectifier (diode circuit) and then through a voltage regulator circuit.

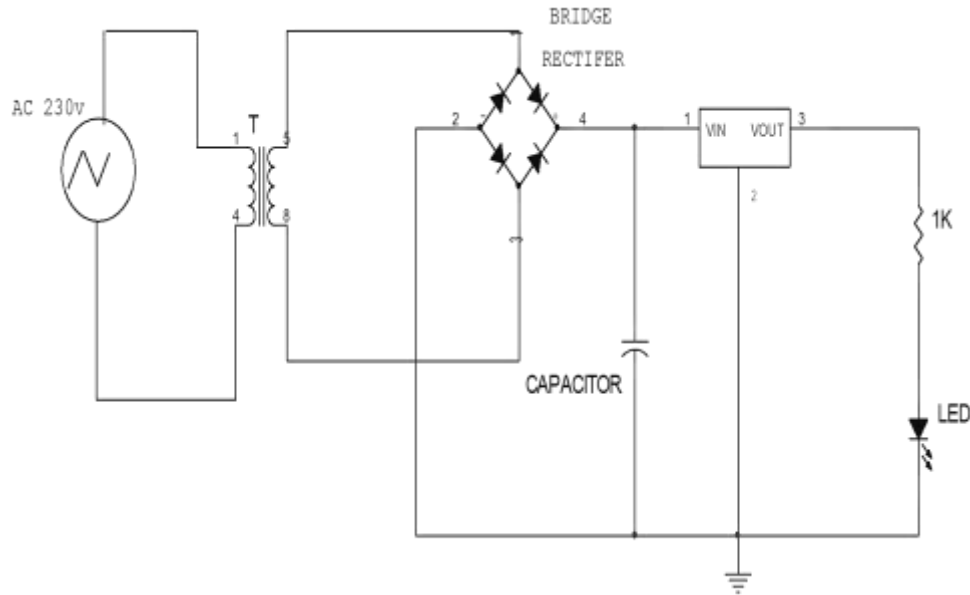


Figure 2: Power Supply

The output of the DC power supply is used to provide constant DC voltage across the load. We will briefly introduce the functions of the components of each DC power source. Transformers are used to raise or lower the power supply voltage into electronic equipment and circuits that require solid state power provided by the DC power supply. This can be isolated from the power cord, which is an important safety consideration. This includes unwanted electrical noise signals that interfere with the power cord on the inner shield and load to prevent incoming power.

PIC16F877A Introduction

PIC Microcontroller PIC16F877A is one of the most popular microcontroller industry. The controller is very convenient to use, and the controller is relatively easy to code or program. One big advantage is that it uses flash technology to write and delete as many times as possible. It has a total of 40 pins, including 33 pin inputs and outputs. PIC16F877A is

used in many PIC microcontroller projects. The PIC16F877A has many applications in digital electronic circuits. PIC16F877A believes it is used on a large digital device. It is used for remote sensors, security equipment and security equipment, home automation and many other industrial tools.

An EEPROM is included, which enables it to permanently store certain information, such as transmit code and receiver frequency and some other related data. Because this controller is low, its processing cost is easy. It is flexible and can be used in an area where the microcontroller was never used as a coprocessor before application and timer operations Etc.

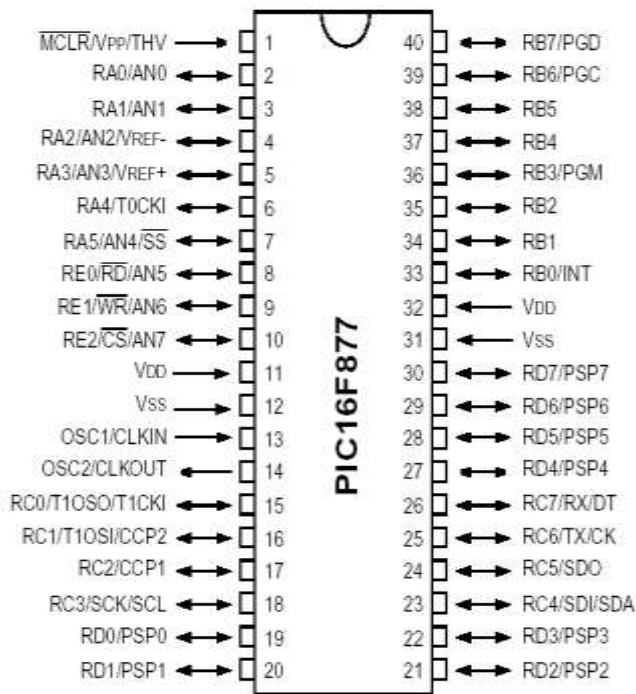


Figure 3: PIC Microcontroller Pin Configuration

Encoder and Decoder

An encoder is a device, circuit, transformer, software program, algorithm, or individual that reduces the amount of information from one form or code to another for standardization, speed, confidentiality, security or space saving purposes..

Decoder is a kind of reverse process of encoder that cancels the encoding so that it can retrieve the original information. The same method used for encryption is usually converted to decoding.

In digital electronics, the decoder can take the form of a multi-input multi-output logic circuit, which converts the coded input into a coded output, where the input and output codes are different. For example from n to 2N, a binary encoded decimal decoder. The processing input must be a function of the decoder, otherwise its output uses the single "disable" output code word. Decoding is essential in terms of data multiplexing, 7-segment display and memory address decoding.

DC Motor



Figure 4: Model of DC Motor

Principles of Operation

As with any motor, the function is based on simple electromagnetism. The magnetic field generated by the current-carrying conductor; When it is placed in the external magnetic field, it experiences a force proportional to the current in the conductor, and is related to the strength of the external magnetic field. As a child, when you play clearly from the magnet, the opposing (south, north) polarities attract, while the polar opposites (north, north, and south). The internal mechanism of the DC motor is designed to use the current-carrying conductor and the external magnetic field to create magnetic contacts between the rotational motions.

LED

A light emitting diode (LED) is a semiconductor light source. LEDs are used as indicator lights in many devices, and are increasingly used for lighting. Introduced as a practical electronic component, early LEDs emit low-intensity red light, but modern versions are available in visible, ultraviolet and infrared wavelengths, with very high brightness.



Figure 5: Models of LED

When a light-emitting diode is forward-oriented (turned on), the electrons re-align with the holes in the device and emit energy in the form of photons. This effect is called electroluminescence and the color of light (relative to the energy of photons) is determined by the energy gap of the semiconductor.

The LEDs are typically small in area (less than 1 square millimeter), and the integrated optical components help to create and reflect its radiation pattern. Light-emitting diodes offer many advantages over fluorescent light sources, including low energy consumption, long life, improved strength, small size, fast switching, and high durability and reliability.

3.3 Advantages

- System is reliable
- Accuracy is high
- Automatic control
- Can able to find location accurately

3.4 Application

- Alcohol detector various vehicle for detecting whether the driver has consumed alcohol.
- This used in various companies or organization to detect alcohol consumption of employees

IV. CONCLUSION

In this effective way we are designing a ambulance detection system. Using this project we can control the traffic and it will control railway gate. The main objective of this project is idea is proposed for controlling the traffic signals in favor of ambulances during the accidents. With this system the ambulance can be reached to the hospital without time lag. By this project human life is saved. In future, this project will be enhanced by using automated approach for fast and accurate performance

4.1 Future Scope

Commercial fleet operators are currently the largest users of vehicle monitoring systems. These systems are used for operational functions such as routing, security, scheduling,

and gathering vehicle information. They are also used in fire extinguishers for large vehicles, such as trains and buses, because sending alarms to vehicle fires can save many lives. Use of this program is in military, marine, automotive, aircraft, fleet management, remote monitoring, remote control, security systems, and remote services.

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