

Intelligent Traffic Control System (Traffic System)

Vidya R

Dept. of Electronics and Communication
Sri Siddhartha Institute of Technology,
Tumkur, India

Lidiya Amruth

Dept. of Electronics and Communication
Sri Siddhartha Institute of Technology
Tumkur, India

Abstract— The number of vehicles is slowly increasing day by day all over the world. Vehicles are also increasing in the major cities of India. This result increasing in huge traffic congestion at a faster rate. Due to which the citizen of metropolitan area is wasting a huge amount of time. Congestion slows the speed, longer the trip times and increases queuing characterize traffic congestion. This lead's the drivers to get frustrated and engaging in road fury, these conditions may affect the patients in the ambulance if they are not taken to the hospital on time.

Keywords— Traffic Congestion control, Traffic control, Emergency vehicle clearance, Ambulance clearance, stolen vehicle detection

I. INTRODUCTION (GENERAL)

As industrialization and urban area population are increasing, the numbers of vehicles on road are also increasing. This is the main reason for traffic problems. One of the major problems faced by people today is traffic. The problems caused due to traffic congestion are heavy traffic jams, long waiting times, breaking of rules, time delay, waste economy, loss of energy & economy etc. intelligent traffic control system is required for efficient traffic control system. There are some problems due to traffic light Controller as mentioned above. The traffic roads in India is not linear based and messy. Therefore, it requires a different solution that is unique from developed countries. Intelligent traffic management can minimize the influence of traffic density. In past days, to provide cost effective option wireless networks were widely used. GPS, RFID, GSM and IR sensor technologies can be used to provide cost effective solutions in traffic control.

II. OBJECTIVES

A. Intelligent traffic control system aims to achieve traffic efficiency by minimizing traffic problems.

Stolen vehicles can easily be detected using RFID based vehicle positioning. When such vehicle passes a traffic junction, the location of stolen vehicle is sent to the owner through SMS.

The ambulance clearance system is to control the traffic and to allow an ambulance to arrive at a particular location without stopping anywhere until the destination is reached

III. LITERATURE SURVEY

S.Sundara Mahalingam et al. [1] the main reasons for growing number of vehicles are rise in number of vehicles, improper facility and the unreasonable distribution of the development. Due to increase in population the number of vehicles also increase, which leads to congestion and causes loss of economy. By using IR sensor density of road is calculated.

A. Abbreviations and Acronyms

GPS-Global positioning system
GSM-global system for mobile communication
LED-light emitting diode
IR-infrared
LCD-liquid crystal display
RFID-radio frequency identification
CONGESTION CONTROL

- ARM controller acts as a central control for system. IR LED is a special LED with producing infrared rays ranging from 700 nm to 1 mm wavelength.
- An IR sensor consists of two parts: the emitter circuit and the detector circuit. The IR photo diode is sensitive to the IR light emitted by an IR LED.
- As IR sensor detect the vehicle, the traffic signal of that path is changed to green and hence reduces the congestion of vehicle.

B. Ambulance clearance

Usually transmitter is fixed to the emergency vehicle and the received signal of the transmitter is received in the traffic junction at receiver. When the emergency signal is transmitted from the ambulance, RF receiver receives the signal and the same is decoded using Decoder (HT12D). The decoded data will be processed and allows swinging traffic signal to green and hence the emergency vehicle can pass through the junction

C. Stolen vehicle detection

The AT mega acts as a central controller of the system. The RFID tag is placed in every vehicle, which can't be removed. When the vehicle is filched, the authorized user has to register the complaint with UID number of the stolen vehicle and this information is stored in traffic control room. The role of RFID reader is to continuously compare vehicle UID number with stolen vehicle UID number. When vehicle UID number matches with stolen vehicle UID the position of stolen vehicle is passed to the owner through SMS by GSM.

IV. AUTHORS

A. Authors and Affiliations

- 1) **VIDYA R,**
Dept Of electronics and communication,
Sri siddhartha institute of technology,
Tumkur.
- 2) **LIDIYA AMRUTH,**
Dept Of electronics and communication,
Sri siddhartha institute of technology,

Tumkur.

3)DIVYAPRABHA

Dept Of electronics and communication,
Sri siddhartha institute of technology,
Tumkur

4)MADHU J

Dept Of electronics and communication,
Sri siddhartha institute of technology,
Tumkur

5)SIDDESH H K

Dept Of electronics and communication,
Sri siddhartha institute of technology,
Tumkur

support had been a constant source of encouragement which crowned my efforts with success.

I am deeply indebted and would like to express my sincere thanks to our beloved Principal Raviprakasha, for providing me an opportunity to do this seminar.

My special gratitude to **Dr. M.Z.Kurian**, HOD, department of E & C, S.S.I.T for his guidance, constant encouragement and wholehearted support.

My sincere thanks to my guide **DIVYAPRABHA**, department of E & C, S.S.I.T for her guidance, constant encouragement and wholehearted support.

Finally I would like to express my sincere thanks to all the staff members of department of E & C, S.S.I.T. for their valuable guidance & support.

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B. Figures and Tables

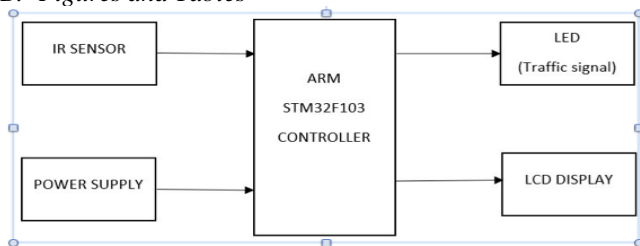


Fig. 1. Block diagram of Congestion control.

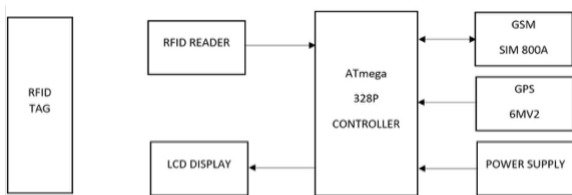


Fig. 2. block diagram of stolen vehicle detection

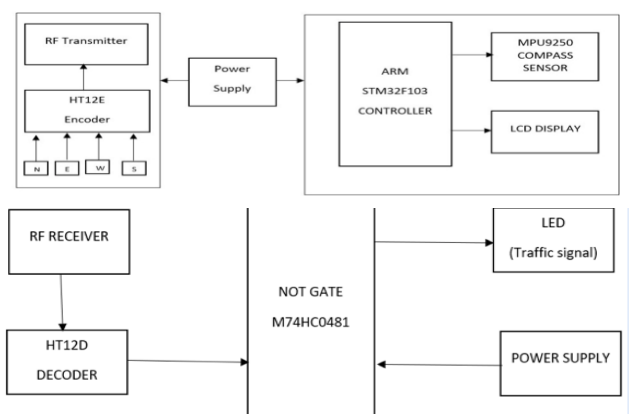


Fig. 3. Block diagram of ambulance clearance

ACKNOWLEDGMENT

The satisfaction and euphoria that accompany the successful completion of any task would be incomplete without mention of the people who made it possible and