# INTELLIGENT TRAFFIC CONTROL SYSTEM

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Abstract:
In this paper ,we are going to implement an intelligent traffic control system in an ambulance clearance and stolen vehicle detection.In our project,we implement this module in an ARDUINO UNO and AT89S52 microcontroller.In ambulance clearance the traffic is easily cleared and give a quick path to reach the destination.Thus,it doesn't wait for any traffic signal.In stolen vehicle detection system,the missing vehicle data is matched to anyone of the vehicle in that signal,it will send the message to nearest police station.
Components:ARDUINO UNO,RFID tag,RFID reader,AT89S52 microcontroller,RF transmitter,RF receiver,LCD display.

## INTRODUCTION

In a developing countries the usage of vehicles is more in day by day.The traffic control process is very tough in now a days.So for introducing an new methods and it will be easily to implement in traffic control signals. The wireless networks are widely used in the road transport as they provide more cost effective options. We use RF,RFID and GSM in traffic control to provide cost effective solutions.RFID is a wireless technology used to carry information between the RFID tag and RFID reader. A GSM mainly used toaccepts a SIM card and operates over a subscription to a mobile operator, just like a mobile phone.



Road Intersection
~100m
Base-Station    Sensor Node
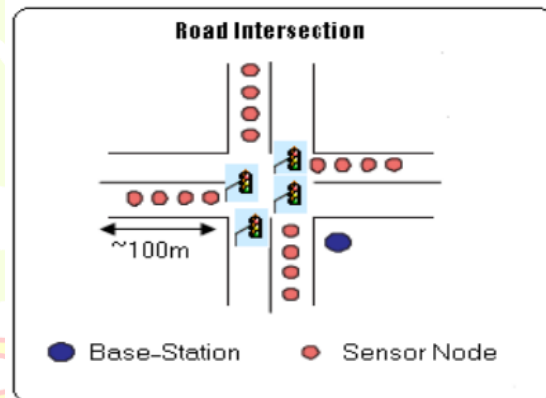
## METHODOLOGY USED

The functionality of system is divided into two main steps. The following block diagram shows the two modules of intelligent traffic control system.
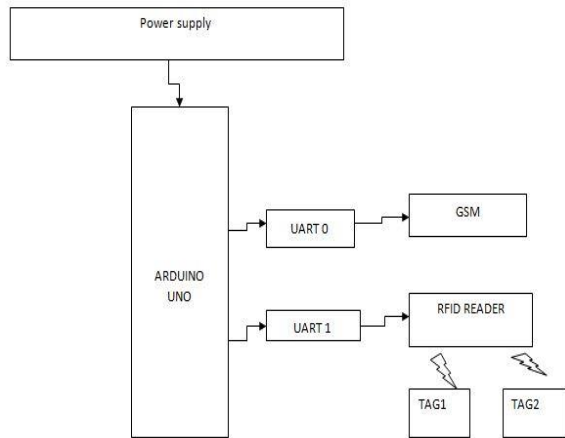
Figure. 1:.Block Diagram for Stolen Vehicle Detection

In a stolen vehicle detection system each vehicle can have a RFID tag and each RFID tag information is stored in the database.If it will cross the traffic signal ,the database information is compared to the vehicle and suddenly the RFID reader will read the RFID tag information.where as the RFID reader is connected to the ARDUINO UNO and it will send the signal to the GSM .where the GSM used to send the message to the nearest police station.so easily catch the thiefted vehicle.



Figure 2. Block Diagram for Ambulance Clearance System in Transmitter Section

Figure.2:In an ambulance clearance system ,it consists of two parts.the first part is RF transmitter ,which is placd in the emergency vehicle.In switching process we use four switches and each one for one side.if anyone of the switch will be prssed it will transmit the signal.
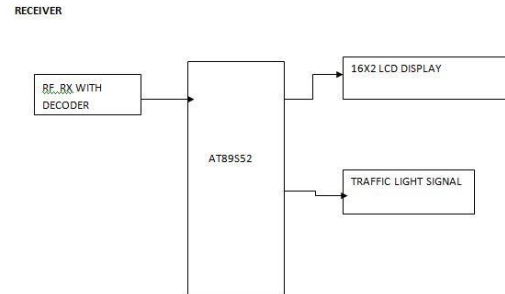


Figure 3. Block Diagram for Ambulance Clearance System in Receiver Section

The second part is RF receiver and which is placed in the traffic signal.If the ambulance coming from anyone of the way ,the transmitter send the message to the receiver .The respective path should be green for certain duration and other paths should be red.

A. RF MODULE:

An RF module is a small electronic device used to transmit or receive radio signals between two devices.The capable of RF transmitter module transmitting a radio wave and modulating that wave to carry data.The capable of RF receiver module receives the modulated RF signal and demodulates it.



B.RFID  READER:

An RFID system is very simple.RFID is a used to collect information from an RFID tag.It is also used to track individual objects.Radio waves are used to transfer data from the tag to a reader.Passive tags collect energy from a nearby RFID reader interrogating radio waves.Active tags have a local power source such as battery and may operate at hundreds of meters from the RFID reader.

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## C.ARDUINO UNO:

The ARDUINO UNO is a microcontroller board.It consists of 14 digital input/output pins,16 MHz quartz crystal,USB connection,power jack,ICSP header and reset button.Simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter.



## D.AT89S52 Microcontroller:

The AT89S52 microcontroller is a low power,high performance CMOS 8-bit microcontroller with 8K bytes of in-system programmable flash memory.The AT89S52 is a powerful microcontroller which provides a highly-flexible and cost effective solution to many embedded control applications
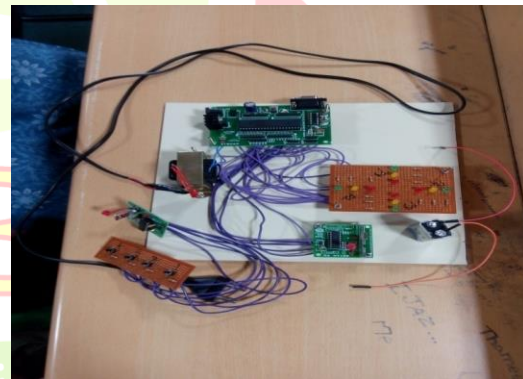


## E.GSM MODEM

A GSM modem mainly used to accept a SIM card and operates over a subscription to a mobile operator.It also used for sending and receiving SMS and MMS messages. It also support features like voice, data, GPRS and integrated TCP/IP stack.The GSM modem is a highly flexible.



## RESULT

The prototype of the stolen vehicle detection and ambulance clearance system has been shown in figure.4 and figure.5



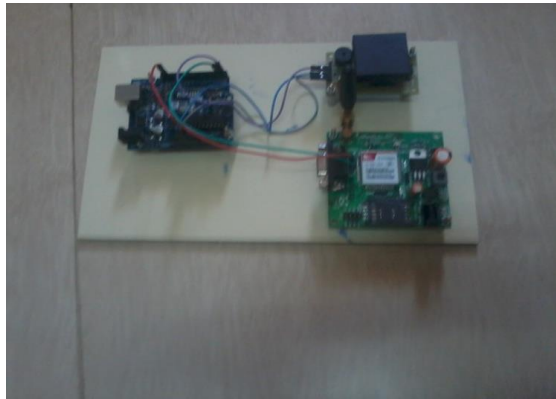Figure.4:Ambulance Clearance System

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Figure.5:Stolen Vehicle Detection System

## CONCLUSION

Thus the paper presents the intelligent traffic control system in advanced methods in various aspects like stolen vehicle and ambulance clearance. In an easier methods like ARDUINO UNO and AT89S52 microcontroller is used to reduce the processing time of clearing ambulance from the road signals to the another traffic signal

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## BIBLIOGRAPHY



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