

# Vehicular Ad Hoc Network Using Wireless Sensor

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**Abstract:** *Now a day's traffic on the road is the major problem in the developed and developing cities. Because of this big amount of traffic, it is impossible to reach somewhere in particular time. Also this big amount of traffic on the road give rise to congestion on the road which lead to the wasting of time and fuel. In the emergency situation it affects a lot to people. With the advancement in technology vehicles themselves could be used to compile and analyze traffic on the road and relay it to the driver in the format of message that will allow them to make smart decision to avoid congested areas, result IMG in congestion control. For this vehicular ad hoc network is used. It is used for intelligent transport system. For the driver s the ad hoc networks is used to transmit various types of message signal over the network. We present a strategy to control traffic congestion and jam reductions with the help of vehicular ad hoc network using wireless sensor networks. This will guide the driver with the message signal to take the decision needed to control the traffic congestion.*

**Keywords:** *Wireless Sensor Networks (WSN), Ad-Hoc*

## 1.INTRODUCTION:

Nowadays transportation plays major role of human culture. Modern transport system, helps people to move from one place to another place fast and smoothly. Even though the advanced technologies introduced in the transportation system, we face many problems such as accident and other incident which is not expected are arrived while driving on road. This may lead to the traffic jam and waste of fuel and time. With reference to [1] it is done by using wireless sensor networks. By the reference [6] traffic congestion is detected by using wireless sensor networks. Through the reference [5] Vehicular ad hoc network is created by using wireless sensor networks which is placed inside the vehicle and on road side. Therefore, exploiting the new technologies, e.g. wireless sensor networks, is required as a solution of reduction of these saddening and reprehensible statistics. This has motivated us to propose a novel and comprehensive system to utilize Wireless Sensor Networks for vehicular networks. raffle

monitoring is a vast domain where WSN can be applied to gather information about the traffic load on a particular road, incoming traffic flow, traffic load at particular period of time (peak hours) and in vehicle prioritization. Wireless Sensor Networks deployed along a road can be utilized to control the traffic load on roads and at traffic intersections. Sensors are deployed on either side of roads at intersection points and in emergency vehicles respectively.

The rapid increase of vehicular traffic and congestion on the highways began hampering the safe and efficient movement of traffic. Consequently, year by year, we see the ascending rate of car accidents and casualties in most of the countries.

We join the vehicular network employing wireless Sensor networks as Vehicular Ad Hoc and Sensor Network in short. The proposed project is particularly for highway traffic is a self-organizing Ad Hoc and sensor network comprised of a large number of sensor node.

## 2.METHODOLOGY

The proposed system describes to overcome the problem of traffic jam on the highways due to the tremendous amount of traffic or accidents. Here first objective is to reduced jam which in turn save time and fuel. Rf module and jam detection sensor is installed in every automobile. The RF module installed in the vehicle is capable of transmittin and receiving the data which is controlled by the balanced software algorithm in the microcontroller. Outside the road sensors are establishe known as road side sensor. The vehicular ad hoc network is created with the sensor installed in automobile and road side sensor.

## 3. HARDWARE TOOLS:

1. POWER SUPPLY
2. RSS
3. RF SENSORS
4. WIRELESS SENSOR

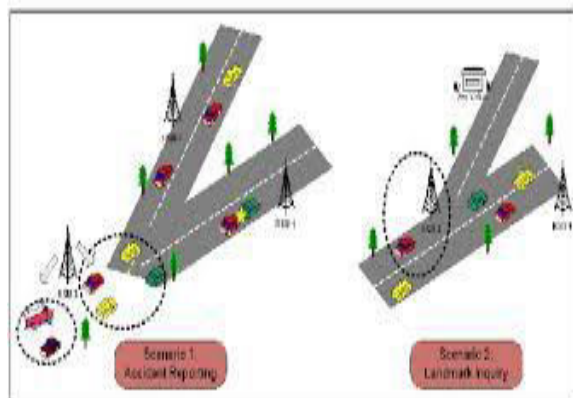
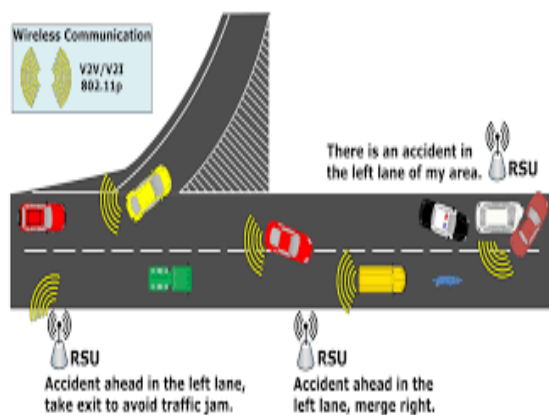
## 4.PROPOSED SYSTEM

In this we are going to make use of wireless sensor networks. Wireless sensor networks have been

attracting many research efforts during the past few years. Sensor networks usually composed of a few sinks and large quantity of inexpensive and small sensor nodes have been deployed in a variety big applications.

In our paradigm, a large number of sensor nodes are densely deployed in a side of high ways. Sensors node collect a data from vehicle as jam indication and send the data by constructing a wireless sensor network. In this microcontroller 8051 is the base station and the different remote station as the wireless sensor networks.

In this we are using sensors which are present at the nodes in the highways and also in the vehicles. This sensor in vehicles and on road side create a vehicular ad hoc network. The sensor nodes collect measurements data such as jam data, obstacle sensor and When sensor senses the jam data and obstacle , sensor transmit RF signal to the road side sensor 1(RSS1). At the RSS1 it transmit to next vehicle as well as next RSS2 send RF signal from the transmitter. The RF receiver of second vehicle gives the signal to the microcontroller. The microcontroller generated the particular logic and give it to the ULN2003. The ULN2003 drives the relay circuit so that it glows that lamp and ring that buzzer.



## 5. CONCLUSION AND FUTURE WORK:

This paper proposes a traffic control system using the WSN technology. Our goal is to minimise the jam on highway s and on road due to accident or by any means.

The paper presented has involve the vehicular ad hoc sensor network using wireless sensor network (WSN) to reduce traffic jam on highway. According to the achieved result the suggested mechanism is realizable and workable. The application of this mechanism leads to make the efficient movement of vehicle on highway to avoid accident and for public safety.

WSN provide significant advantages both in cost as well as in distributed intelligence on the one hand installation and maintenance expenses are reduced because of the use of cheap devices which do not required wiring.

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