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Wireless sensor network for automotive field

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Abstract—Vehicular ad hoc network (VANET) ,is a technology that uses moves cars as nodes in a network to create a mobile network .VANET turns every participating car into a wireless router or node, allowing cars approximately 100 to 300 metres of each other to connect and,in turn,create a network with a wide range As cars falls out of the signal range and drop out of the network ,other cars can join in,connecting vehicles to one another so that a WSN.In our project we create a VANET for vehicle accident identifying process.Here we have three units.We have both vehicle to vehicle communication and vehicle to road side communication.V2V is done for accident information is transfer to the ambulance from vehicle directly.V2R is done for ambulance to traffic light.Here we use ZIGBEE as a communication medium for VANET.Because it have low interference,at a time it can communicate with 255 devices.

Keywords- VANET, CAN, digital signature

I. INTRODUCTION

Vehicular ad hoc Network, VANET has its own unique characteristics for traditional mobile ad-hoc network.VANET with high dynamic topology, enough energy and storage space, moving track predictable and diversified automotive network scenarios, has many significant applications in transportation and communication, such as vehicle safety, road traffic efficiency, and information and
entertainment. [1].
Li et al.[2] proposed a secure and efficient vehicle network communications scheme using asymmetric encryption to build authentication keys and protect privacy.In addition, Li et al.[3] also combined asymmetric encryption and hash functions to improve security of their scheme. However, the computational cost is still too high. In order to satisfy the requirement of wireless network security,
International Society of Electrical Engineering Electronics upgrades IEEE802.11 wireless communication standard to IEEE802.11p [4], a wireless access in the Vehicular Environment, WAVE, for vehicle communication. But the Wi-Fi connection. Firstly, we propose a vehicle network security communication protocol about official vehicles.

In emergency, official vehicles can request for the public

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key processed to the service node. After receiving the request, the service node first verifies identity of the official vehicles,and then sends the public key of the key management server to the official vehicles.
Official vehicle and key managementagenciesgenerated the session keythroughhomomorphickey agreement mechanisms,and reduced the computational costs. Secondly, we propose a secure official vehicle communication protocol for
VANET, protect the communication transmission, and satisfy the security requirements.

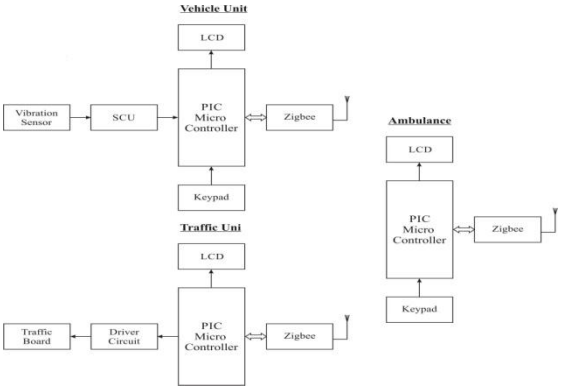
.II. PROPOSED SCHEME

The proposed system consists of Vehicle module to transfer the accident information to ambulance and
Roadside devices for clear traffic to reach the desination quickly to save the human life.The information can be transmitted using ZIGBEE as a communication medium.Because it consume low power and low interference and allows two way communication.We use Random pseudo code to provide security so that the information that we pass cannot be theft easily.

III.FUTURE WORK

This system can also be improved by adding some integration like vehicle to vehicle safety speed data transfer at turns on road.By sensing the angle of banking followed by friction in the wheels and road surface one can modify the propose system.with the help of these additions vehicles on turn can instanteously share the safety speed that need to be follow at turns in order to make safe driving.

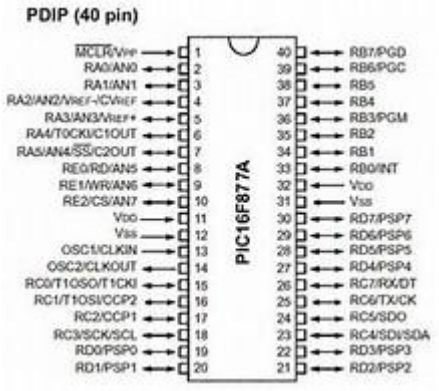
BLOCK DIAGRAM



BLOCK DIAGRAM DESCRIPTION

PIC MICROCONTROLLER:

- It contains inbuilt ADC
- It has 8 analog input
- It generate 8MHz frequency output constantly with the help of bypass capacitor

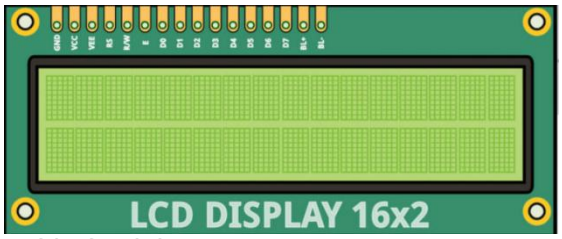


ZIGBEE

Zigbee is a communication medium between devices since it has low interference and it connect 255 devices at a time

LCD Display

It helps to display the output



IV.CONCLUSION

In this project,a novel idea is explained for passing the information quickly to the ambulance and for controlling the traffic signal in favour of ambulance during the accident.with this system we can reach accident spot quickly and to reach the hospital without time delay.

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