VANNET based Virtual Dash Board

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Abstract: **The main aim of this project is to control the accident near the school zone and hospital zone. The paper presented here is about vehicle navigation and safety implementation.**

I. INTRODUCTION

As the title suggests, the project is aimed at automatically sensing the areas / zones like "School Zone", "Hospital zone" or "Accident Zone". In convention, these special zones or areas are indicated at the roadside on a pillar or road sign poles. As an example, near school zone, the sign board displays "School Zone Ahead, Drive Slowly", or near a hospital, "Hospital Area-Do not Blow Horn", but in reality rarely this is practices. Drivers go at very high speed as usual near school zone, or operate the harsh horns loudly causing inconvenience to the patients in the hospital.

Even though these are meant for the safety of the vehicles travelling and also for the general public, it is hardly practices by the vehicle drivers. As a result, making the whole concept of displaying warning sign and messages on the roadside boards meaningless.

To provide a better alternative, one can develop a system which will automatically sense such traffic signs automatically and accordingly inform the drives and also assist him in controlling the vehicle voluntarily or forcibly. All in all resulting in a very effective and fail proof system to provide traffic regulation, safety and convenience of the people.

II. LITERATURE SURVEY

Traffic management is one of the most critical issues in big cities now a days. Lots of research and management techniques are used by government and city traffic controlling bodies to resolve this issue. Recent advances in wireless technologies have given rice to emergence of Vehicular Ad-hoc Networks (VANETs).

The main idea of this paper [1] the research focuses on use of VANET technology for efficient traffic management and route planning while vehicles heads from source to destination. VANET technology is used as a medium to generate updated information for the vehicle when it heads from source to its destination.

From the paper [2] VANET provides tremendous applications for future VANET users. Safety information exchange enables life-critical application, such as the alerting functionality during intersection traversing and lane merging. In VANET some serious network attacks such as man in middle attack, masquerading is possible. In this paper we are going to throw some light on the previous research done in this area.

According to paper [3] class of routing protocols called road based using vehicular traffic (RBVT) routing, which outperforms existing routing protocols in city-based vehicular ad-hoc networks (VANETs).

From paper [4] Mobile ad-hoc networks (MANET) are one area that has recently received considerable attention. One promising application of mobile ad-hoc network is the development of mobile ad-hoc networks is the development of VANET.

III. PROBLEM DOMAINS

- ACCIDENT ZONES
- NOISE POLLUTION
- OVER SPEED
- FOGGY AREAS

IV. BLOCK DIAGRAM

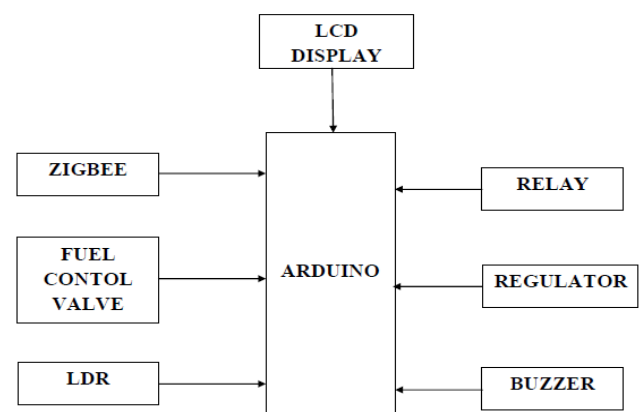It consists of two units
- ZONE UNIT
- VEHICLE UNIT

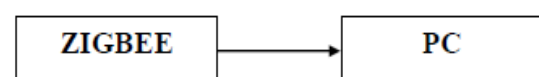### A. VEHICLE UNIT

Fig1: Block diagram of vehicle unit

B. ZONE UNIT

Fig2: Block diagram of zone unit

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V. TECHNOLOGY STACK

A. ARDUINO UNO

It is a micro controller board, based on ATmega328.It has a 14 digital input/output pins and 6 analog input pins.
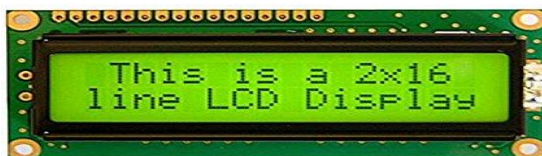

B. LDR

It is a component that has a variable resistance that changes with the light Intensities falls up on it. It is used to detect whether the time is day time or night time.

C. LCD

To display the school zone and hospital zone. Here we are using alphanumerical LCD.

D. BUZZER

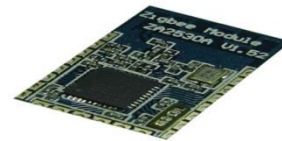It is a audio signalling device which may be mechanical and electro mechanical.

E. RELAY

Relays are switches that open and close circuits electromechanically or electronically.

F. ZIGBEE

Zigbee is a wireless communication medium. It has 9600 baud rate. Transmission distance is 10-100 meters.

G. FUEL CONTROL VALVE

It limits the supply of fuel.

VI. APPLICATIONS

- This project can be used in the high peaks, hills for the detection of sharp curves and automatic speed limit.

- It can be used in the hospital areas, school zones and other similar places like temple, mosque where in blowing horn or over speed are restricted.

- This project can be used in foggy areas to limit the speed of the vehicle

- The project can also be used near the old bridges to automatically limit the vehicle speed and direction.

VII. ADVANTAGES

- This application is easy to install and easy to operate.

- More reliable than manual Operation.

VIII. CONCLUSION AND FUTURE SCOPES

This project has a solution to accident avoidance in areas like school and foggy areas. This can also be used in auto breaking with obstacle detection, auto speed limit.

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