

VEHICLE MONITORING SYSTEM

CSE-406 :(Interfacing project Group-01)

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Abstract—This is a project which can be implemented in the highways of our country to reduce the problems of road accidents and sound pollution. The methods we are going to using in this project are speed monitoring and fine, sound monitoring and fine and measuring the rate of fuel or petrol of the vehicle. By the system that we are going to implement those vehicles can be easily identified which are crossing speed limit , which are willingly making sound pollution and can also detect the drivers of those vehicle who are stealing the fuel or petrol by measuring the rate of fuel or petrol. We are going to use several hardware components, various types of sensors and our knowledge about interfacing and database in this project. In Transport System of Bangladesh, if we can implement our project efficiently, it will contribute in our national economy as well as public safety. we are also about to build up a mobile app which will coordinate with the database of our project and by means of which, the owner of private vehicles can monitor their drivers very easily as they are stealing the petrol of the vehicle or not and also authority can check if any vehicle crossing the speed limit or not. We also believe that the implementation of this project will reduce the rate of road accidents and sound pollution.

I. INTRODUCTION

Transport is an important component of economic activity in all countries but especially so in those that are developing. A secure transportation system is critical to overall national security from terrorism. The transportation infrastructure has been robust. It has shown great capacity to recover from natural disasters. However, it is more vulnerable now than previously because it is adopting ever larger dependencies on other infrastructure. Therefore, it is no longer sufficient to take care of its roads and rails and runways. It must also be concerned with the potential for attacks on ITS installations or on other aspects of telecommunication and computer processing activities that are essential for effective transportation systems.

Surface transportation systems increasingly rely on a growing number of sensing, computing, and communications capabilities – collectively known as information technologies. The application of these technologies to our transportation infrastructure has been termed **Intelligent Transportation Systems (ITS)** [1] Over the past several years, ITS have clearly demonstrated their ability to improve the efficiency of moving goods and people, improve the safety of our transportation system, and provide the public with information on alternative modes of travel.

The project we are going to implement is also an application of Intelligent Transportation Systems (ITS).

Road accidents are a common issue in the circumstances of Bangladesh. Accidents are happening specially in highway every year in an alarming number of rates. There are several reasons behind road accidents. Unconsciousness of the drivers, driving vehicles over optimal speed, overtaking tendency are the main reasons. So, our aim to is come out a solution of this problem by implementing the project that we've thought.

[2]According to World Health Organization (WHO) noise is second only to air pollution in the impact it has on health. It is a major cause, not only of hearing loss, but also of heart disease, learning problems in children and sleep disturbance. Yet traffic noise could easily be halved, with existing technology, if more stringent limits were adopted. Motorcycles and private cars are the main sources of noise pollution in the country's major cities, followed by public buses, says a new survey of the Department of Environment (DoE). The survey shows that public buses contribute relatively less noise than two other modes of transport, which indicates that introduction of public transportation can check the sound pollution in these cities. The survey, conducted in eight cities earlier this year, reveals that motor bikes and private cars, on average, generate 95 decibel (dB) noise each in Dhaka city while buses contribute to about 44 dB. So, aim is to come up with a solution with this alarming problem of sound pollution of vehicles by implementing our project.

[3]Employee theft is something that happens within a lot of companies it often goes undetected for quite a long period of time. Whether its taking stationery from the supplies cupboard, or actually reaching your hand into the till, its still classed as theft. For companies that deal with huge amounts of fuel, a serious issue for many is that some employees have started to take advantage and steal fuel for their own personal use and needs. This can lead to a loss of trust in all drivers even those who are not doing anything wrong. Many owners arent even aware that its happening or arent sure about how to handle the situation when it does arise. This is why we have put together a helpful guide to help you out identifying the problem , implementing our project, measuring petrol limit and finally come up with a solution.

Finally , overall we want to say that , In Transport System of Bangladesh, if we can implement our project efficiently, it will contribute in our national economy as well as public safety.

II. RELATED WORKS

Blockchain, [4] widely known as one of the disruptive technologies emerged in recent years, is experiencing rapid development and has the full potential of revolutionizing the increasingly centralized intelligent transportation systems (ITS) in applications. Blockchain can be utilized to establish a secured, trusted and decentralized autonomous ITS ecosystem, creating better usage of the legacy ITS infrastructure and resources, especially effective for crowdsourcing technology

A general multimodal system, [5] interface and interaction coordination involves the deliberate assembly of modal movement units MMUs (i.e., vessel, vehicle, or rail car) activities into schedules such that interfaces are facilitated, and the joint variable cost of coordination of intermodal interaction is minimized. In this paper, two methods of nonstochastic scheduling coordination are described, and their application in a globally integrated transport system network model is shown.

The aim of the research [6] is to explore the perception of safety and security problems on the part of those parties involved in the operation of public transportation. This perception is used as a base to develop an improvement agenda for the particular context of developing countries.

Public Transportation Security [7] series publications have jointly published Making Transportation in Tunnels Safe and Secure. The report is Volume 12 in each series.

This paper sheds light [8] on the management of a research project in a new topic for IS like the one of Intelligent Transport Systems (ITS). It describes and discusses the methodology adopted for a survey designed by the authors and experimented during a recent research on ITS carried out on behalf of an Italian Ministry.

In the STP documents, [9] a well thought out mass transport plan including three Bus Rapid Transit (BRT) and three Metro lines (MRT) and a development of 54 arterial roads and improvement of public bus services were proposed as part of overall traffic and transport development for Greater Dhaka Area (GDA) (as defined in STP comprising of DNCC, DSCC and its immediate environs). While lagging in time scale, the STP plan should be still being followed carefully.

In this paper [10] characteristics of transportation and consequent mobility, safety and environmental effects are discussed. The purpose of the present paper is to conceptualized a vision and identify supporting policies for sustainable transport development.

Rapid urbanization in [11] Bangladesh has far outstripped the capacity of the urban transport infrastructure, leading to low level of efficiency and overall quality of the transport system. The Bus Rapid Transit System (BRT system) will present sustainable public transport system by replacing existing fuel-inefficient fleet with larger capacity modern BRT buses and improving average vehicular travel speed in the corridor.

Difference of our project relating to these related works: In some sense, our project will give a better solution than this works. Because, in a single project we are implementing

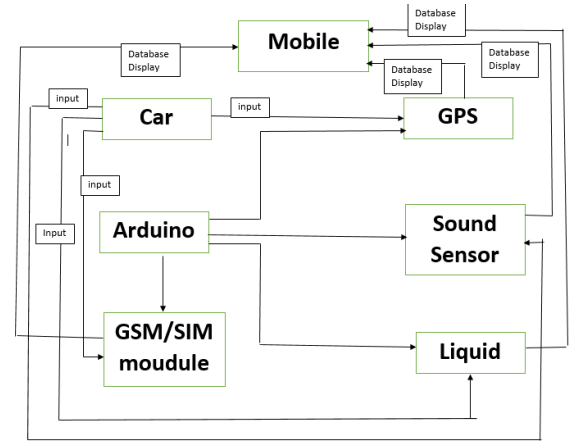


Fig. 1. Block diagram of the component

Speed Monitoring and Fine ,Sound Monitoring and Fine and measuring petrol limit of the vehicles. Things that we are coordinating together in this projects are 1. Implementing interfacing 2. Using sensors 3. Speed measuring by using database 4. Coordinating hardware components 5. Measuring petrol limit

III. CONCEPTUAL DESIGN OF THE SYSTEM

A. Block diagram of the component

Fig-01

B. Features of the project

Every area has a minimum speed limit in a road. Crossing that speed limit is always a crime. The main feature of our project is, When a car enter into an area we will detect the speed of that car and match with the speed limit of the corresponding area's road. If the speed of the car is higher than the speed limit than a message will forward to the authority and authority will take necessary action or penalty against that person. we will also develop an mobile app which will forward the message of the car user's penalty to him or her.

The another feature of our project is calculating the rate of petrol of a vehicle by using liquid level sensor. With this sensor we will calculate the normal rate of fuel consumption of a car. In the absence of car owner,if the fuel or petrol consumption is more than the normal rate then a message will forward to the car user which help him or her to know that the driver of his or her car is stealing petrol.

The last feature of our project is sensing the sound produced by a car in decibel and match that with the corresponding area's sound limit, in case of exceedation a message will forward to the authority by our mobile app that the can take necessary action against that car's user.

C. Flow chart

(1)

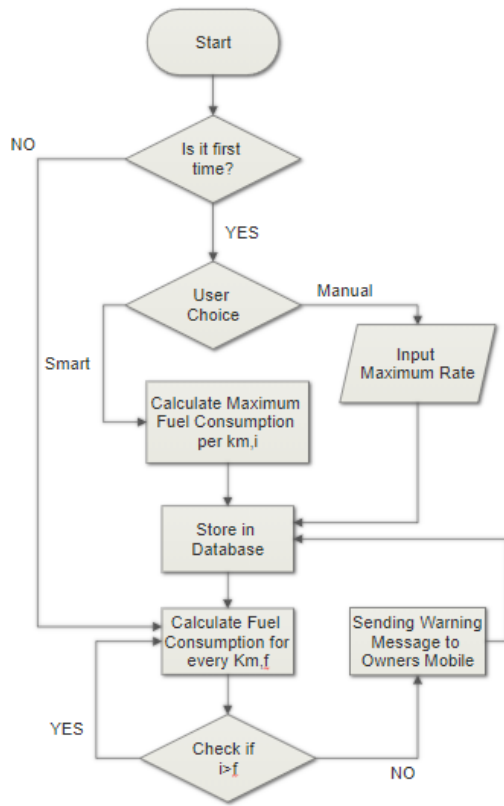


Fig. 2. Flow chart of Liquid Level

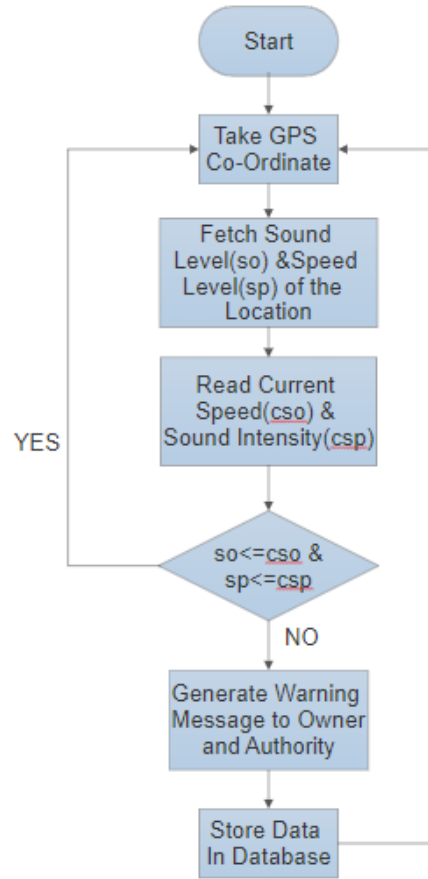


Fig. 3. Flow chart of speed and sound monitoring process

IV. CONCLUSION

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