A REVIEW PAPER ON INTELLIGENCE TRANSPORTATION SYSTEM

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Abstract: Intelligent displace can be defined as it gives a traffic between one vehicle to another vehicle ,so that one terror can know about that earlier from which side the vehicles are coming by the information that we have put and from this we can minimize accidents develop that we see in maximum time.

IOT is used in this Intelligent transport system which is a very good and alone technique to solve the problems of displace traffic of city .We know that in our city we are liner several problems while using vehicles .Intelligence system can fetch data from vehicle   and enter the data to the correct server by the help of s to manage road traffic .

This is less cost, more efficient, and minimize transport system. It develops the product rate , and   protect the humanity from accidents. Importance of this system is   : It is so efficient that it has the capability to send the data to the vehicle radar on its own. So   that we can reduce accident.

I.   INTRODUCTION

Intelligent Transport System   becomes   better transportation safety and plasticity and amplify global connectivity by means of productivity improvements extract through the group action of advanced publicity technologies into the moving support and in venteligent vehicle.

Intelligent moving Systems is the application of computer, electronics, and communication technologies and management master plan in an link to provide passenger information to better the patrol and control of the plain moving system. These systems involve vehicles, drivers, passengers, drivers, and managers all communicate with each other and the surrounding, and linking with the complex hold systems to better the protection and meager of road systems .As messenger by Commission for Global Road protection (June 2006), the global road finish were within 750,000 to 880,000 in the year 1999 and predicted about 1.25 million finish per year and the toll is growing more. World health organization news(1999), showed that in the year 199 0 road accidents as a cause of loss or disability were the ninth most powerful cause of loss or unfitness and predicted that by 2020 this will move to sixth place. Without powerful changes to the road transport systems these frozen figures are likely to increase peerless.
 Intelligence transportation system is an future transportation system comprised of an advanced

information and telecommunication for roadstead and vehicles Intelligence Transportation system is a application of advance technologies using electronics divide ,communication and advance sensors. These application provides   passenger with   important information while improving the status and efficiency of the transportation system.
ITS is not limited for highway traffic, it is also provide services and implement in navigation system, air transport system, water transport system and rail systems. Day to day popularity of Intelligent Transportation System and increasing the demands and development in transportation systems intelligent transportation system divided into generations

II.   APPLICATION

A .Road safety application

Road   safety   applications   exploit   wireless   V2X communications   between   surrounding   ITS abstraction(e.g., rocket, road infrastructures, etc.) to slow down traffic accidents and to secure the drivers from various road risk. To that end, each ITS entity regularly broadcasts safety messages to report its neighborhood about its situation and location information. Furthermore, depending on specific events (e.g., accidents, see road risk), each ITS entity may also generate the transmission of notification messages to   close-by vehicles and emergency services

B. Traffic Management Applications

Traffic management applications represent a second major class of ITS applications, whose   main objective is to enhance the management and coordination of traffic flows and to provide various cooperative navigation services to the drivers. These applications rely on the collection and analysis of the exchanged ITS messages (i.e., between ITS entities) in order to build and maintain global traffic map databases. The traffic data are generally collected by the deployed road side units and/or from road sensors and are transmitted wirelessly to remote trusted data centers for further data analysis and processing. The collected data include contextual and location-based information related to vehicles, drivers and road events

C. Autonomous Driving Applications

Autonomous driving, also known as automated driving, applications represent the next big leap   in human transport technologies, which is habitual to be deployed by 2020 and totally   functional by 2030.This new

technology will build on the automation of the vehicle fell and driving functions, based on six levels of automation ,where the human driver becomes a passenger and is no longer required future autonomous cars will integrate different technologies, including:

(i) ultrasonic sensors to detect the presence of obstacles;

(ii) lider and/or radar to create a 360-degree field of view to prevent Crash.

(iii) high definition cameras to spot road hazards in real time, such as pedestrians and animals;

(iv) Global Navigation Satellite System receivers to provide a highly

Accurate

D. Infotainment and Comfort Applications

Infotainment and comfort applications aim at enlarge the driving experience by providing the drivers with various added-value services. These services are generally offered by loyal service providers, where the similar applications and services are downloaded and installed on the vehicles application units . AUs communicate with the remote SPs data centers through their OBUs, using different V2I communication technologies (e.g., 4G/LTE, 5G). A typical example of such an application consists in the remote vehicle indicative and supply application in which the SPs

III. Vehicle Data Collection

This Systems collects the data of vehicles related to the performance and quality of vehicles for study processing and remote monitoring. The system depends on vehicle gateway, server software plan, databases and web based interfaces. Application of the system implement support to the Military, Engineering, Ground durability testing, vehicle tracking and predictive maintenance. The example of this system is Georgia Tech Trip Data Collection DRIVE Atlanta Laboratory in Georgia. The system works on the second-by second vehicle record, position and speed through GPS.

IV. Emergency vehicle Notification system

Intelligence transportation system spcially the FCD(Floating car data) model can also be used to give advance warning to motorist of traffic jams, blast and other emergency situations. This system can then give alternative routes or judgment to motorist so as to avoid congestion and travel delays.

V. Intelligent Transportation Technology

A. Wireless communication:

Various forms of wireless communications technologies have been suggested for intelligent transportation systems. Radio modem communication on UHF(ultra high frequency) and VHF (very high frequency)frequencies are generally used for short and long range communication within mind transportation system

The wireless communication has become an huge area. Wireless networks connect the devices, transmit the data through signals and utility medium (radio wave, microwave) for transferring and sharing the data between nodes.

a . Dedicated short-range communication

It offers communication between the vehicle and the roadside in limited locations .Short range communication usual being recommend by the Intelligence Transportation Society of America .

The range of this protocol can be draw using Mobile ad hoc networks or Mesh networking.

b.Long and medium range communication

Continuous air interface long and medium range

Long and medium range afford continuous communication between a vehicle and the roadside using choice of communication ,including cellular and infra-red links.

It will provides a range of application ,including vehicle safety and information ,as well as celebration for driver and passenger. These sensors are capable to monitor the different conditions like monitor the temperature, humidity , movement of vehicle, pressure, noise, speed, direction

(fig 1)

B. Computational Technology

The Computational Technology duplicated will developed technologies in which sensors ,travelers computers ,in vehicle computes and computers in the static framework The installation of operational system and process in portage vehicles have also allow software application and artificial intelligence system to be installed everywhere computing and other programs designed to be integrated into a grater transportations system.

C. Floating Car Data/Floating Cellular Data

Floating car data (FCD) in transportation system resolve the transportation speed on the track. FCD works on different data types for instants speed, travel direction, time and localization data from mobile phones and the mobile acts as a sensor

Available Floating car data detection techniques

.Non Real time:

a..Manual server

b. Video recording and Manual search.

c. In vehicle data recording

Real time:

a .Not inductive loop

b .Automatic number plate recognition (ANPR)

c .GPS trace and mobile commons like a example GSM

d .Radio signal triangulation

e .Road side beacon and dedicated short range tag.

(fig 2)

C .Senssing

To stock any road application, the first thing that we need is message from the road. Sensors on roads can provide such data. There are several actual modes of sensing: static sensing, where sensors are static placed on the road, mobile sensing, where sensors are placed in the moving car and hybrid sensing, where both in-vehicle and on-road root are needed. In this section, we study the key technologies in each division and outline some open questions in the situation of Indian roads

A .Static sensing techniques:

(1)Loops and magnetic sensors: - Vehicle find and counting using inviting sensors or loops under the road top, has been search in research and arrange systems .

(2) Images and videos - Video control to chief traffic states and notice fact and hotspots is enough common gives a whole survey of the major computer vision techniques used in traffic applications.

(3) Acoustic sensors - Some recent research is being done to use audio sensors for traffic statemerits , mainly in developing regions, where traffic being obscure is rowdy

(4) RF sensors - Wireless radios fixed across the road have communication signals damaged by vehicle movement in between. There are commercial products and research efforts using this for traffic monitoring.

D. Inductive Loop Detection:

An inductive loop vehicle detector is a detection system, which uses the magnet to induce an electrical current in a wire. Inductive loops are use for communication and salution of signals like vehicle detector, vehicle passage, presence.

One or more loops of wire are fixed under the road and connected to a control box

When a vehicle passes over or rests on te loop ,inductance is reduce showing a vehicle is present

Benefits:

 a. Not impacted by environmental conditions

 b .Accurate indexing vehicle presence

 c .Performs well in both high and low volume traffic .

The System Are Consist with Three Components:

 a. Loopb.

 b. Loop Extension Cable

 c. Detector

E. Video Vehicle Detection:

 Video vehicle detection is a powerfull form of detection in intelligent transportation system.

It is the one of the most generally used method. Video detection is an image processor. It consist of a microprocessor base CPU and software that resolve video images. Using a mouse and interactive graphics ,the user places virtual "detectors" on the video image show on a monitor .

 Statistics can be progressively dispatch to a server for real-time analysis

F. Audio detection:

It is possible to measure traffic frequency on a road using the audio signal that consist of the additive sound form the tire noise, engine-idling noise ,hooks and air frenzy noise .A road side installed microphone pick up the audio that hold the various vehicle noise and audio signal processing technique that can be used to measure the traffic state.

G. Bluetooth detection:

 Bluetooth is an proper and low- cost way to measure travel time and make origin and objective analysis .Bluetooth is a wireless standard use a communicate between electron from **Bluetooth** devices in passing vehicle .If these sensors are mutually they are able to calculate travel time and provide data for origin and ambition matrices .Compared o other traffic measurement technologies ,Bluetooth measurement has some differences.

(Fig 3)

Conclusion:

Traffic congestion is an *important* problem in Indian cities. The characteristics of Indian roads and traffic make the problem *interesting* to solve. There is scope for evaluating existing ideas in different and challenging traffic scenarios,

innovate new solutions and empirically evaluate ideas in collaboration with public and private sectors

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