



INTELLIGENT TRANSPORTATION SYSTEM

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Abstract—Interest in the intelligent transportation system comes from problems caused by traffic congestion and a synergy of new information technology for simulation real time and communications networks. Traffic congestion has been increasing worldwide as a result of increased motorization, urbanization, population growth and changes in population density. Congestion reduces efficiency of transportation infrastructure and increases travel time, air pollution and fuel consumption. Now a day's development of roads has created a new havoc which lead to the increase in the accident cases all across the world, in order to over-come from such a problem, Intelligent Transport System holds a good point. Intelligent Transport System is designed for the urban/state/private road transport organization. The system consists of a backend and a hardware component to provide an integrated solution for the driver console unit, electronic ticketing machine passenger information system and vehicle tracking system. Intelligent Transport System provides a single solution for transport companies to schedule and monitor buses with the help of advanced technologies such as GPS, Wi-Fi and GPRS. Intelligent Transport System facilitates better public transport services by considering the bus earning, public safety and security. This paper basically discusses the impact and the various application fields of Intelligent Transport System for road transportation. Also, this paper put forward the implementation of various transportation technologies that will be vital for homeland security, vehicular surveillance along with technologies that can make our ride more safe and economical.

Index Terms—

1. ITS :- Intelligent Transportation System
2. IR :- Infra-red
3. DSRC :- Dedicated Short Range Communication
4. IC :- Integrated Chip
5. LED :- Light Emitting Diode
6. GND :- Ground PowerSupply
7. VCC :- Voltage Common Collector
8. GIS :- Geographic Information System
9. NRSC :-National Road Safety Council
10. NH :- National Highway
11. APC :- Accident Prevention Committee
12. NHAI :- National Highway Authority of India

I.INTRODUCTION

The Intelligent Transportation Systems Strategic Development Plan for the Indian Region is a planning document that defines how advanced technologies can support the transportation and land use planning initiatives in the region to help planners to achieve the region's planning objectives. Results of the Strategic Development Plan will help determine how and when to incorporate advanced technology in transportation projects, and which technologies to use. By integrating the Strategic Development Plan with other regional planning initiatives such as the Metropolitan

Transportation Plan, and by incorporating lessons learned when other agencies deploy similar technologies; the planning partners can realize the benefits from coordination, shared investments, and multimodal integration while working towards common regional goals. The Strategic Development Plan suggests some tools and techniques for including advanced technologies in the planning and deployment stages of regional development, and key strategies for building upon the existing regional advanced technology framework. The Intelligent Transportation Systems Strategic Development Plan for the Indian Region is a planning document that defines how advanced technologies can support the transportation and land use planning initiatives in the region to help planners to achieve the region's planning objectives.

IV. UNITS

Its main objective is to properly integrate drivers, vehicles and roads in a way that supports people's driving. Its aim is to solve not only car traffic issues but also socioeconomic issues, accidental issues and geopathic issues.

- To reduce accidents in hilly regions.
- To detect the geopathic stress zone along the road.
- To improve traffic management system by using portable traffic lights in heavy traffic areas.

V. HELPFUL HINTS

1. Traffic Management System:

Traffic congestion has been one of the fundamental problems faced by modern cities since the wide usage of automobiles. Just a normal few minutes' trip to the convenience store may take up to half an hour due to traffic jam or slowdown. According to the police, congestions are actually the causes of some issues like road rage, road bullies and major accidents. The small road capacity is also one of the contributing factors. As the number of private cars increases greatly over the years, traffic congestion occurs when the needed road capacity is not fulfilled. Simple improvements of the road infrastructure can easily solve this problem. Since congestion occurs frequently in the cities, local government, municipal can consider passing laws on restricting the number of cars owned in a family. This method is in fact, workable and effective

2. Accident prevention in Hilly Areas:

There are a number of turns (blind spots) on the mountains which if not drove carefully and safely may lead to loss of life and property. This system is installed on these points and functions to deliver about the traffic from the upcoming and ongoing side. Here the proposed idea for installation is on the hairpin bends where there is little cue about the upcoming traffic. The IR (Infrared Radiation) sensor works to sense the upcoming vehicle and send the signal to display the number of vehicles approaching and display them on the display board. For e.g., if two vehicles are approaching from one side and from the other side the sensor will sense the number of vehicles and alert them.

3. Geopathic stress in humans:

Geopathic Stress is the energy emitted by the earth is the primary cause for degenerative illness as well as chronic Health conditions and is the biggest threat to the Built environment. Energy emitted by the earth surface which has the greater impact on the normal functioning of human beings. World health Organisation has identified that the negative impact of our environment causes human being sick and affect the immune system. Geopathic Stress affects almost each and every part of the built environment. It is very difficult for the current generation of people to understand that there are disturbed vibrations coming out from below the earth, which can be harmful to human beings.

B. References

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VIII.PUBLICATION PRINCIPLES

In the present globe the proportion of accident has increased so widely because people weren't helping when accident occurs even person is fallen before of their eyes .So our main motive of this project is to avoid the accident by implementing sensor based technology and in future if accident of person is happened he wouldn't need to depend upon others he can safely travel or can pass curves or hilly roads when LED light glows it gives in indications of alert purpose of this paper is to decrease the quantity of accidents in curve roads. this can be done by alerting the driver by means of LED light which glows when vehicle comes from the opposite side of the curve. It is detected by the assistance of Ultrasonic sensor which is interfaced to the microcontroller arduino UNO. By this we can save thousands of lives within the curve roads.

Accident black spots were identified by correlating the data collected by the physical survey with existing data i.e. primary and secondary data. Existing data was analyzed by following three methods i.e. Method of Ranking, Accident Density Method and Weighted Severity Index Method. Table below shows the comparison of accidents by the three methods mentioned above. Investigation of the identified accident black spots was done and the locations as well as the causes of accidents was found out. The remedial measures implemented on the selected stretch of NH-4 were discussed. The corrective measures suggested for various identified black spots were providing speed limit boards, installation of cat eyes and road reflectors, providing road humps before the junction, improving sight distance at the junction by increasing set back distance at the junction, providing delineators and retro-reflective markers, curve indicators.

IX.CONCLUSION

In the present globe the proportion of accident has increased so widely because people weren't helping when accident occurs even person is fallen before of their eyes .So our main motive of this project is to avoid the accident by implementing sensor based technology and in future if accident of person is happened he wouldn't need to depend upon others he can safely travel or can pass curves or hilly roads when LED light glows it gives in indications of alert The purpose of this paper is to decrease the quantity of accidents in curve roads this can be done by alerting the driver by means of LED light which glows when vehicle comes from the opposite side of the curve. The is detected by the assistance of Ultrasonic sensor which is interfaced to the microcontroller arduino UNO. By this we can save thousands of lives within the curve roads.

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A cost effective, IoT enabled portable traffic light system has been designed, assembled and tested. It is integrated with ThingSpeak cloud and effective sharing of workload of running algorithms between edge device and cloud. It is designed to work in three modes, manual mode, automatic mode and smart automatic mode. In manual mode, user operates manually using the mobile app with Wi-Fi connectivity, internet connectivity being optional. It gathers the traffic density information based on the operations performed by the traffic personnel and stores it in the cloud. This data constitutes the data set for the algorithm to be

implemented at ThingSpeak cloud. Algorithms are run on this dataset to generate optimal time values, which are used when operated in smart automatic mode. Based on the output received from the algorithm, optimized time value is given as delay to the traffic signal. In automatic mode, the user gets the option of selecting different time delays based on the traffic density, same will be used as delay for operation of green signal in all directions. Once time delay is set, system works independently without any human interventions. The system efficiently demonstrates robustness and accuracy in wireless data communication, cloud computation and effective traffic management. It stands out as an autonomous system capable of functioning with minimal inputs from the user

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