

Intelligent Transport System

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Abstract— A broad range of diverse technologies, known collectively as intelligent transportation systems (ITS), holds the answer to many of our transportation problems. ITS is comprised of a number of technologies, including information processing, communications, controls and electronics. Joining these technologies to our transportation system will save lives, save time, and save money.

There are many technologies involved in intelligent transportation system,

- ❖ Wireless communications
- ❖ Computational technologies
- ❖ Floating car data/floating cellular data
- ❖ Sensing technologies
- ❖ Inductive loop detection
- ❖ Video vehicle detection

“ Intelligent transportation system i.e. ITS has wide range of applications as,

- ❖ Electronic toll collection
- ❖ Emergency vehicle notification systems
- ❖ Cordon zones with congestion pricing
- ❖ Automatic road enforcement
- ❖ Collision avoidance systems
- ❖ Dynamic Traffic Light Sequence
- ❖ Intelligent Vehicle

KEYWORDS:Automatic Number Plate Recognition System (ANPR), Reduce Fatal Accidents,Safety Rollers, Solar Cum Wind Mills, Protection from CO Emission.

I. INTRODUCTION

Background situations of promoting ITS:-

The future of ITS is promising. Yet, ITS itself, is anything but futuristic. Already, real systems, products and services are at work throughout the world. Still, the wide-scale development and deployment of these technologies represents a true revolution in the way we, as a nation, think about transportation. While many aspects of our lives have been made more pleasant and productive through the use of advanced technologies, we have somehow been content to endure a transportation system whose primary controlling technology is the four-way traffic signal, a technology that has changed little since it was first invented. It has taken transportation a long time to catch on, but now the industry is sprinting to catch up.

Fulfilling the need for a national system that is both economically sound and environmentally efficient requires a new way of looking at and solving our transportation problems. The decades-old panacea of simply pouring more and more concrete neither solves our transportation problems, nor meets the broad vision of an efficient transportation system.

Traffic accidents and congestion take a heavy toll on lives, productivity, and wastes energy. ITS enables people and goods to move more safely and efficiently through a state-of-the-art, intermodal transportation system.

Interest in ITS comes from the problems caused by traffic congestion and a synergy of new information technology for simulation, real-time control, 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.

- ❖ Problems in transportation :-
 - Fuel consumption
 - To reduce road accidents
 - Traffic congestion

Intelligent transportation technologies using ANPR:-

The Automatic number plate recognition (ANPR) is a mass surveillance method that uses optical character recognition on images to read the license plates on vehicles. They can use existing closed-circuit television or road-rule enforcement cameras, or ones specifically designed for the task. They are used by various police forces and as a method of electronic toll collection on pay-per-use roads and monitoring traffic activity, such as red light adherence in an intersection.

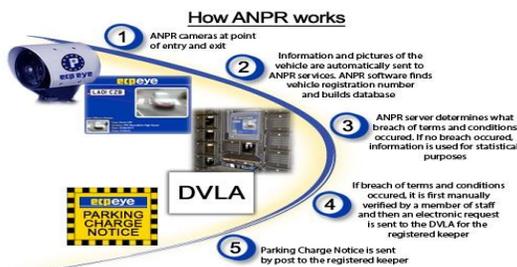


FIG NO.01 ANPR SYSTEM

ANPR can be used to store the images captured by the cameras as well as the text from the license plate, with some configurable to store a photograph of the driver. Systems commonly use infrared lighting to allow the camera to take the picture at any time of the day. A powerful flash is included in at least one version of the intersection monitoring cameras, serving both to illuminate the picture and to make the aware of his or her mistake. ANPR technology tends to be region-specific, owing to plate variation from place to place. Automatic recognition of car license plate number became a very important in our daily life because of the unlimited increase of cars and transportation systems which make it impossible to be fully managed and

monitored by humans, examples are so many like traffic monitoring, tracking stolen cars, managing parking toll, red-light violation enforcement, border and customs checkpoints. Yet it's a very challenging problem, due to the diversity of plate formats, different scales, rotations and non-uniform illumination conditions during image acquisition. This paper mainly introduces an Automatic Number Plate Recognition System (ANPR) using Morphological operations, Histogram manipulation and Edge Detection Techniques for plate localization and characters segmentation. Artificial Neural Networks are used for character classification and recognition.

- ❖ Benefits of intelligent transportation system (ITS)
 - Time savings
 - Better emergency response time and services
 - Reduce crashes and fatalities
 - Cost avoidance
 - Increased customer

Provision of collision resistant safety rollers:-

Safety rollers is a safety fixtures that prevents drivers and passengers from fatal accidents by not only absorbing shock energy but also converting shock energy into rotational energy. Safety roller needs to be installed at site where vehicles are exposed to frequent accidents. Safety rollers will safely lead a vehicle back to the road or stop the vehicle by absorbing shock energy. Safety roller will effectively function or drivers to control vehicles with its noticeable color – luminescence.



FIG NO.02



FIG NO.03 COLLISION RESISTANT ROLLERS

Hybrid solar cum wind millson highways:-

“Wind energy is available when the wind is blowing...solar energy is available when sun is shining”



FIG NO.04HYBRID MILLS

Hybrid mills is one of the renewable energy resources. it is made by integrating solar and wind energy. Street lights system on highways can be handle by this system properly.

OBJECTIVES:-

- ❖ Background situations of promoting ITS:-
- ❖ Intelligent transportation technologies using ANPR
- ❖ Intelligent transportation appliances
- ❖ Provision of collision resistant safety rollers
- ❖ Producing unconventional energy using hybrid mills (solar cum wind mills) on highways.

CONCLUSION:-

- ✓ The use of ITS in some developed countries like America, Japan, England, etc. has given them high progress in the field of transportation and helped them in their economic progress.
- ✓ The ratio of traffic congestions and accidents as well as wastage of fuel will definitely decreased to a larger extent.
- ✓ By utilizing maximum unconventional sources and eco-friendly technics in ITS will increase the power generation as well as increase the rate of productivity.
- ✓ Hence, with much more interest & advanced research in the field of ITS, it can be implemented in our country and it will be the solution for our traffic.