INTELLIGENT TRANSPORTATION SYSTEM IN INDIA

Shubham Srivastava (*M.tech student of structural engineering Rgec, Meerut, U.P. INDIA*)

Siddharth Jain (*Assistant Professor of Civil engineering, KIET Group of Institutions, Ghaziabad, U.P. INDIA*)

Abstract

Idea of **Intelligent transport system** comes from problem caused by **traffic congestion**. Due to rapid vehicular growth with increasing population, rural to urban and economic upsurge has put immense pressure on transportation system in INDIA. *Traffic congestion reduces efficiency, increases travel time, causes air pollution and increases fuel consumption*. Due to development in transportation network it also leads to increase in number of road accidents all over India. This paper, attempts to understand the application of INTELLIGENT TRANSPORTATION SYSTEM (ITS) as a solution of present traffic congestion problem and how to decrease road accidents by the use of technology.

This paper will also explain various ITS applications and policy measures in India context and a brief about the issuses and challenges of ITS in INDIA.

KEY WORDS : *Intelligent transportation system, Traffic congestion, Fuel consumption, To reduce road accidents, Probe and smart vehicles, Sensing technology, Wireless communications, Video vehicle detection, Emergency management system, GIS, safety in public as well as private vehicles.*

1. Introduction

Worlds population is increasing at a high rate and simultaneously the world economy is also growing. Hence people are used to have greater mobility and when it comes to transportation, Road movement is considered to be most convient and easy to everyone. There is no doubt in higher the people using the transportation system more will be the road accidents hence there is a requirement of proper transportation system which can handel a larger mass of people on wheels safely and it is make sure it should be envoirment friendly as well. World wide various organizations are working on this problem and it is first setup in 1991 by US Department of Transportation. Vehicle to vehicle communication, vehicle to infrastructure communication, electronic toll collection are some of the very popular projects undergoing worldwide. When it comes to the developing countries like India, Intelligent Transportation System is very helpul. Each nation whether developed or developing, when implement the intelligent technologies the surface transportation system will be safest, economical and last but not the least Environment friendly.

2. Overview

Intelligent transport system is one of the best method to simply or minimize traffic problems. The main aim of ITS is to achieving traffic efficiency, reducing traffic congestion, to control environmental degradation, energy conservation, reducing travel time, safety of passenger, increase travel comfort with the help of information and communication technologies. Its covers all modes of transport and considers all elements of the transportation systems like vehicle, infrastructure, and the driver or user, interacting together dynamically. The overall application of ITS is to collect data, analysis of that data and use that analysis data into operational, control and research concept for traffic management.

ITS relies on wide range of technologies and functions such as Communications (Microwave, internet, Bluetooth), Geographical Locations, Geographical Information System, Data acquisition and exchange, Camera system and Artificial vision, Detection and classification, In-vehicle systems and Digital Mapping.

3. Basic Requirement of ITS for India is-

- Intelligent Transport Systems (ITS) intend to add information and communications technology to transport infrastructure and vehicles in an effort to improve:

1.Safety

2.Reliability

3.Efficiency

4. Quality of means of transport.

4. WHAT ARE THE THOUGHTS WHICH COMES IN THE MIND OF A PERSON DRIVING ON ROADS SPECIALLY IN INDIA.

All these problems will easily be handled by technology if we will implement ITS all over India

5. BASIC PROBLEMS IN INDIAN TRASPORTATION SYSTEM.

5.1 Conditions of roads are pathetic which leads to the probability to accident

5.2 *Lack of traffic management system*-Traffic management system is meant to handle large mass of traffic efficiently, but due to presence of large crowd of vehicles the complexity of management system increases and these systems somehow fails to handle the crowd., which results in decrease in mobility, reduced fuel consumption, higher travel time and pollution.

5.3 Traffic police system in India is also not upto the mark , the proper security and surveillance on the traffic system and vehicles can also help to reduce the problem of traffic congestion and will also lead in decrease of road accidents.

5.4 Vehicle to Vehicle Co-ordination and implementation of new technologies .This is the most important from the point of implementation of ITS, vehicle to vehicle coordination refers to the onboard information regarding the nearby vehicle this would facilitates in collision control, coordinating them on the basis of the trips planned by the driver.

6. SOLUTIONS FOR THE ABOVE PROBLEMS

6.1 By Implementation of properly programmed traffic management system, that means by implementing the *GPS,GIS & Remote sensing* , the congestion in particular route can be easily known and hence the route can be diverted and problem for traffic congestion can be reduced and **this should be marked as standard in Indian vehicles like now airbags and braking system is.**
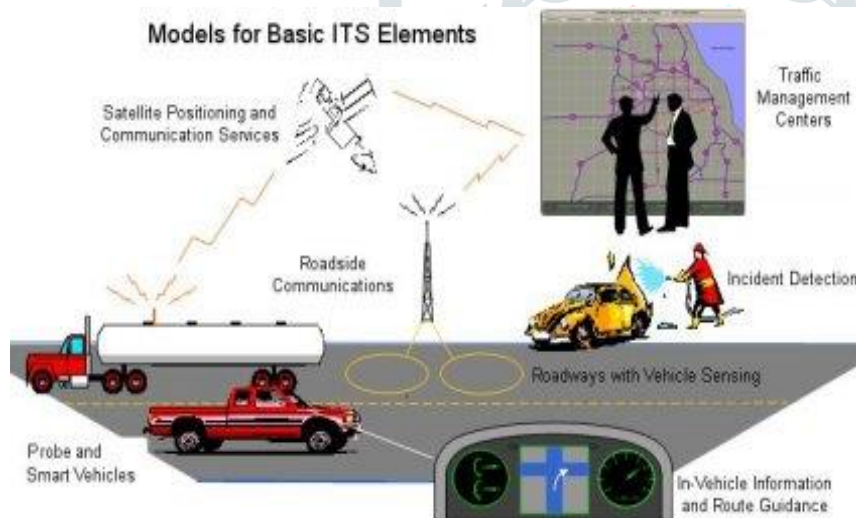
6.2 **Electronic toll collection** (ETC) makes it possible for vehicles to drive through toll gates at traffic speed, reducing congestion at toll plazas and automating toll collection.

6.3 **Emergency vehicle notification systems** - The in-vehicle e-cell is an emergency call generated either manually by the vehicle occupants or automatically via activation of in-vehicle sensors after an accident.

6.4 **Automatic road enforcement** -A traffic enforcement camera system, consisting of a camera and a vehicle monitoring device, is used to detect and identify vehicles disobeying a speed limit or some other road legal requirement.

6.5 **Advanced Driver Assistance System** -This would increase the safety of vehicle mobility, driver would be assisted on demand irrespective to time for any situation and hence the emergency time can be tackled easily.

7. CONCLUSION

Implementing intelligent transport system in India will definitely going to affect our ride in positive way. It will reduce the possibility of road accidents, it will reduce average journey time by reducing travel time, it will also reduce fuel consumption and hence also contributes to environment. ITS holds a good point in making our journey comfortable and safe.

APPLYING ITS IN INDIA SEEMS PROMOSING SOLUTION FOR ADVANCE TRAFFIC CONTROL AND MANAGEMENT

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