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INTILLIGENT TRANSPORTATION SYSTEM -AN OVERVIEW

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Abstract

Interest in the intelligent transportation system comes from problems caused by traffic blocking and a synergy of new information technology for simulation real time and communications networks. Traffic congestion has been increasing worldwide as a result or increased motorization, urbanization, population growth and changes in population density. blocking reduces good organization or transportation road and rail network and increases travel time, air pollution and fuel consumption. Now a day's development of roads has created a new disorder 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 city/state/personal road transport association. The system consists of a backend and a hardware component to provide an integrated solution for the driver comfort unit, electronic tracking machine passenger information system among vehicle tracking system. Intelligent Transport System provides a single solution for transport companies to schedule and supervise buses with the help of advance technologies such as GPS, Wi-Fi and GPRS. Intelligent Transport System facilitate better public transfer services by considering the bus earn public safety and security. This paper basically discuss the bang and the various application fields or Intelligent Transport System for road carrying. Also, this paper put forward the performance or various transportation technologies that will be essential for motherland security, vehicular observation along with technologies that can make our journey more safe and economical.

Key Words: *ITS, Rapid Transportation, GPRS, WIFI, GPS*

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INTRODUCTION

ITS is application of computer, electronic and communication technologies and management strategies to provide traveller information to increase safety and efficiency of surface transportation system .ITS involves drivers , passenger, vehicle, road operators and mangers all intersecting with each other and environment .As reported by commission for global road safety (JUNE 2006), the global road deaths were between 750000 to 880000 in year 1999 and estimated about 1.2million death per year .

ITS is the best solution to decrease the problem of accident and traffic.

Traditional driver training, infrastructure and safety improvement, may contribute to certain extent to reduce number of accident but not enough to combat this menace .ITS improves transportationsafety , mobility and enhance global connectivity by means of productivity improvement achieved through the integration of advance communication technologies into the transportation infrastructure and in vehicle . It improve driving experience safety and capacity of road decreasing the number of accident improve transportation efficiency and reduce pollution and time and also create awareness .

The major objectives of ITS to evaluate develop analyse and integrate new technologies to achieve trafficefficiency improve environmental quality save energy conserve time and enhance safety and comfort for driver.

ITS is the best solution for traffic management

1.   Advance traffic management system
2.   Advanced traveller information system
3.   Advance vehicle control system
4.   Commercial vehicle operation
5.   Advanced public transportation system

Advance Traffic Management System

The Advanced Traffic Management System (ATMS) field is a primary subfield within the Intelligent Transportation System (ITS) area. The ATMS view is a top-down management viewpoint that integrate technology primarily to improve the flow of vehicle traffic and improve safety. Real-time traffic data from cameras, speed sensors, etc. flows into a Transportation Management Centre (TMC) where it is integrated and processed (e.g. for incident detection), and may result in events taken (e.g. traffic routing, DMSmessages) with the goal of civilizing traffic flow. The National ITS Architecture defines the following main goals and metrics for ITS:

i   Increase transportation system good organization
ii develop mobility
iii Improve safety
iv Reduce fuel consumption and environmental cost
v   Increase economic efficiency
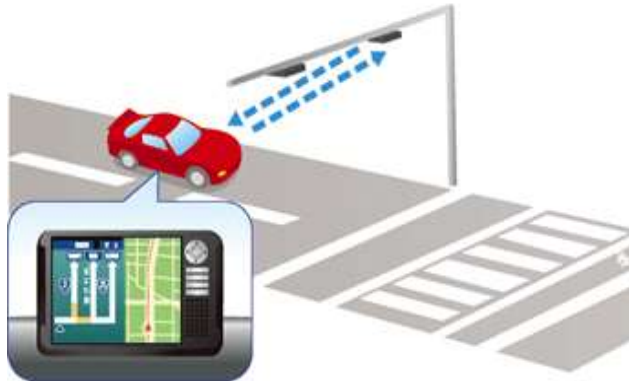vi Create an environment for an ITS market.
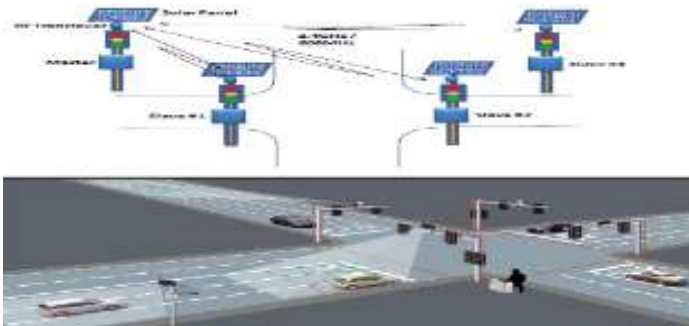

fig. (1) Advance Traffic Management System

fig.(2) Advance Traffic Management System

Advanced Traveller Information System

An Advanced Traveller Information System (ATIS) is any system that acquires, analyzes, and presents information to assist surface transportation travellers in moving from a starting location (origin) to their desired destination.[1] An ATIS may operate through information supplied entirely within the vehicle or it can also use data supplied by the traffic management centre applicable information may include locations of incidents, weather and road conditions, best routes, optional speeds, and lane limits, all part of the Intelligent transportation system or ITS.

The various types of systems are public, personal, or a mixture and can be provided free, through user subscription, or third-party support. Delivery of ATIS can be by television, radio, computer, mobile phone that includes mapping and, Text messaging using SMS information systems, automobile through in-vehicle information systems, Variable-message signs, as well as any other means of communication, received as personal or mass communications before, during, and after travelling. kiosk may be located at airports, bus stations, subways, or tourist location

fig.(3) Advanced Traveller Information System

fig(4) Advanced Traveller Information System

Advance Vehicle Control System

To many people the subject of self-guided "automatic" automobile has a "science fiction" flavour typical of projects that are either far further than the state of the art or unreasonable from a rate/benefit position. Actually, recent advances in computers, sensors and other related technology have made such a system possible in the relatively near term and huge benefits can justify major development and deployment costs.

Advanced Vehicle Control Systems is part of the "Smart Highway" initiative also known as Intelligent Vehicle Highway Systems (IVHS) and Intelligent Transportation Systems (ITS) now receiving considerable study international

If being able to take a snooze on the way to Schenectady were the only advantage of an automated car guidance system it would be not likely that the very considerable development and deployment costs for such a system would be necessary in the relatively near future. An automated system can have major advantages over thecurrent system in the areas of highway space consumption and safety as described below.

fig.(5) Advance Vehicle Control System

fig(6) Advance Vehicle Control System

Commercial Vehicle Operation

Commercial Vehicle Operations is an function of Intelligent Transportation Systems for trucks.

A classic system would be purchased by the managers of a trucking company. It would have a satellite navigation system, a small computer and a digital radio in each truck. Every fifteen minutes the computer transmit where the truck has been. The digital radio service ahead the data to the central office of the trucking company. A computer system in the central office manages the fleet in real time under control of a team of dispatchers.

In this way, the central office knows where its trucks are. The company tracks character loads by using bar-coded containers and pallets to track loads joint into a larger container. To minimize handling-cost, damage and waste of vehicle capacity best-sized pallets are often constructed at distribution points to go to particular destination

A good load-tracking system will help deliver more than 95% of its loads by means of truck, on planned schedules. If a truck gets off its route, or is late, the truck can be diverted to a better route, or urgent loads that are likely to be late can be diverted to air freight. This allows a trucking company to deliver a true finest serviceat only somewhat higher cost. The best proprietary systems, such as the one operated by FedEx, achieve better than 99.999% on-time delivery.
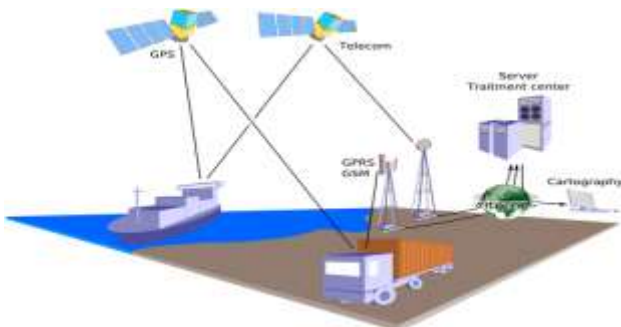

fig.(7) Commercial Vehicle Operation

fig.(8) Commercial Vehicle Operation

Advanced Public Transportation System

Advanced public transportation systems (APTS) seek to apply transportation management and information technologies to public transfer systems to increase their effectiveness of operation and improve the safety of public transportation rider. Examples of APTS applications include real-time passenger information systems, automatic vehicle spot systems, bus arrival notice systems, and systems providing priority of passage to buses at signalized intersections
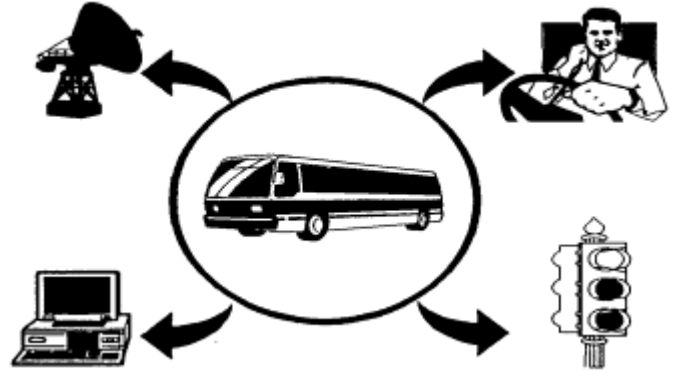

fig.(9) Advanced Public Transportation System

fig.(10) Advanced Public Transportation System

Benefits of ITS

Using of Intelligent Transport Systems carries many benefits, both for city and users of the communications of these cities. The preparation and realization of the system is a serious expense for the executive cell, but the savings in first year of system activity can surpass the cost. Other benefits for cities and their users, which are the result of the implementation of the ITS are: increasing the street network bandwidth to 20% - 25%

i improving road safety, including the reduction of accidents 40% to even 80%

ii reducing travel time and power consumption (45% - 75%) reducing emission, up to 50%, which considerably affects the quality of the environment .

iii the area improving traffic conditions and driver comfort also.

iv reducing convoy management costs of road

v reducing the cost of maintenance and re-establishment of road surface

vi increasing the economic beauty of the region

CONCLUSION

As Traffic congestion has been increasing worldwide as a result of increased motorization, urbanization, population growth and changes in population density so intelligent transportation system is the best solution for all above problem .

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