



INTELLIGENT TRANSPORTATION SYSTEM

Yogendra Bhandari¹, Mahfuzul Islam², Kodishala Ruthwik³, Mihar Lal⁴ (Assistant Professor)

Department of Civil Engineering, Lovely Professional University, Punjab, India

Abstract: Traffic management is a serious concern all over the world. An Intelligent Transport System (ITS) assists us in overcoming these challenges. innovative techniques and technology to solve challenges Intelligent Transport System rely on the assistance of telecommunications, computing, and electrical Integrated technical and management plans a method to give travelers with an enhancement in safety and excellent road and transit efficiency Just on road, management and supervision systems are available. the gridlock in traffic In this research, we've looked into The Smarter Technologies were researched. System of transport

Key word: ITS , Human power , Data base Server , ETO

1. INTRODUCTION

Transportation refers to the moving of products and people from one location to another, as well as the numerous modes of transportation used to achieve this. The capacity and necessity to move vast amounts of commodities or big groups of people across great distances at high rates of speed in comfort and security has grown as civilization and, in especially, technical advancement has progressed. Fixed installations such as roads, railways, airways, rivers and streams, waterways, and pipelines, as well as terminals like airports, train stations, bus stations, storage facilities, trucking terminals, refuelling depots (including igniting docks as well as fuel stations), and seaports, make up transportation infrastructure. As technology and science advance, the entire transport network is altered from time to time, and we today use the following forms of transport.

(a) Human-Powered: Sentient transport is a type of sustainable mobility that involves moving people and products using human muscular power, such as walking, jogging, or swimming

(b) Animal-Powered: Mammal transportation refers to the employment of working animals to carry people and goods. Humans can ride several of the animals directly, utilise them as pack animals to transport things, or harness them to pull sleds or transport vehicles alone or in groups.

C. Air: A fixed-wing aircraft, also known as an aeroplane, is a greater loads craft that generates lift by moving the air in connection to the wings. This term is used to differentiate these aircraft from rotary-wing aircraft. icles.

D. Land : Land transporattion can be possible my two mode

(i) Rail Transporation

(ii) Road Transporation

E. Water: The transportation of a boats and ships as a canal, boat, cruiser, or sailboat—over a river or lake, such as a river, river, lake, canal, or river—is known as water transport. Because all watercraft require flotation, the hull is an important part of their design, maintenance, and aesthetics

2. INTELLIGENT TRANSPORTATION:

To improve safety and efficiency, Intelligent Vehicle Networks (ITS) use a set of devices to monitor, assess, and manage transport systems." For the time being, forget about fantasies of science fiction-style transportation. Smart transportation isn't simply a futuristic concept. It is now being deployed in a number of places, with the lessons learned from their successes and mistakes being utilised to enhance systems in new areas.



Figure 01- Detailing of ITS system

The following are the advantages of intelligent transportation:

1. Transportation that is efficient is safer.
2. Transport in the smart city is better regulated.
3. Smart Transit saves time and money.
4. It is cost-effective to use smart technology.
5. Smart Transit gives you quick access to information.

3. CASE STUDY ABOUT DIFFERENT ITS

Educating special groups and general public in transportation and transportation-related fields.

Organizations such as the American Association of State Highway & Transportation Officials, the American Public Transportation Association and the Intelligent Transportation

3.1 CASE STUDY OF UNITED STATE AMERICA:

1. The IntelliDrive System:

That's a multifunctional programmer that makes use of cellular technologies to enable cars, infrastructures, and customers' personal telecommunications equipment.

2. Cooperative Intersection Collision Avoidance Systems

The action plan is a collaboration between us Transportation department, auto manufacturers, but also state and local public transit agencies with the aim of fostering an optimised combination of driverless cars, autonomy facilities, but also collaborative telecommunication networks that really can address the full range of crosswalk crash issues

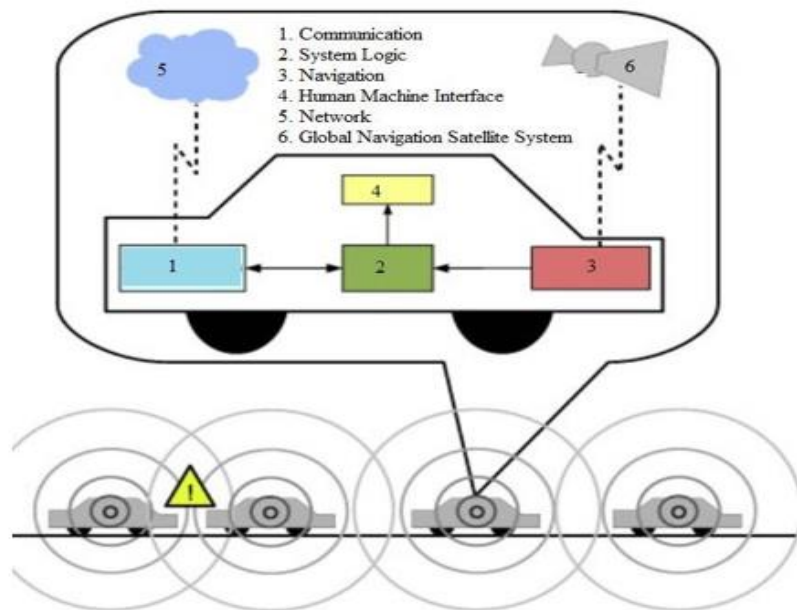


Figure 02 – Details plan of CICAS

3. The Integrated Corridor Management Systems:

Its goal is to engage with numerous organizations and programmer areas for the Us Department of Transportation to find, test, and implement relevant technologies and methods in order to develop an interlocking network suitable of pass trip administration

3.2 CASE STUDY OF JAPAN: Japan created It was in the start of the last several years. Throughout that stage, which is regarded as the initial study of ITS, the use of guidance computers for clever toll collections began. It has following types of system

1. Comprehensive Automobile Control System: It was created between 1973 until 1977 under the sponsorship of Minister of Trade for Industries. This required communication amongst each car and the management software.

- Optimization of Traffic
- Increasing Productivity in Road Management
- Support in Public Transportation
- Increasing Productivity in Heavy Trucks
- Support for Pedestrians
- Support for Disaster Response

It has a five system

- (1) The route planning subsystems (Rohm)
- (2) The driver intelligence subsystems (DIS)
- (3) The vehicle collision data system (TIS)
- (4) The destination presentation panel subsystem (RDB)
- (5) The prioritized system for government service vehicles (PVP)

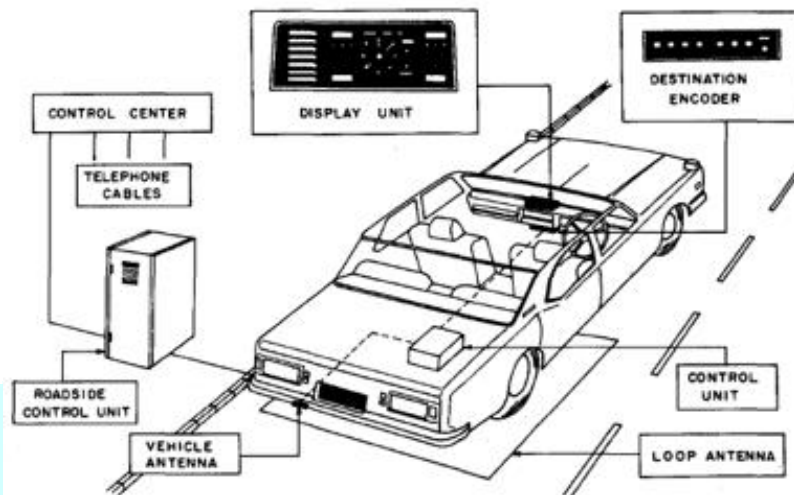


Figure 03- Components of CACS

2. Road Automobile Communication System (RACS): Between 1984 and 1991, it was organized by the Road Industries Group under the direction of Ministry of Public works. In 1987 to 1988, a 250 km² research region between Moscow or Yokohama was used to undertake a number of field trials with 94 roadside devices.

3. Advanced Mobile Traffic Information and Communication System:

On the proposal of the Regional Security Agency, it had to be constructed jointly with the Japanese Transportation Innovations and Systems Agency.

3.3 CASE STUDY ABOUT ITS SYSTEM OF EUROPE:

Greatest Economy and Extraordinary Safety in European Traffic (PROMETHEUS). Polyphemus is part of the European Survey Coordination Agency (EUREKA) forum, an industrial and academic initiative involving 19 regions and European car companies

- 1. CONNECT PROGRAM:** Its goal was to bring together state officials, route authorities, and traffic updates service providers in Central and Eastern Europe to coordinate and develop ITS.
- 2. Digital Tachograph:** That was a cooperative project between ERTICO and the European Commission to secure free movement for EU cars in Northern and Eastern European nations
- 3. The ETNITE:** The European Partnership on Its own Skills and Retraining, a skilnet, multi-sector organization that provided approved ITS learning content, was funded by the initiative.

4. RESULTS AND DISCUSSION:

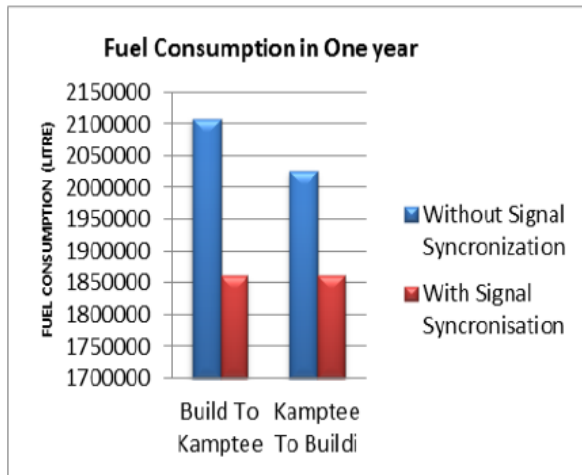


Figure 04 Fuels consumption with or without the ITS

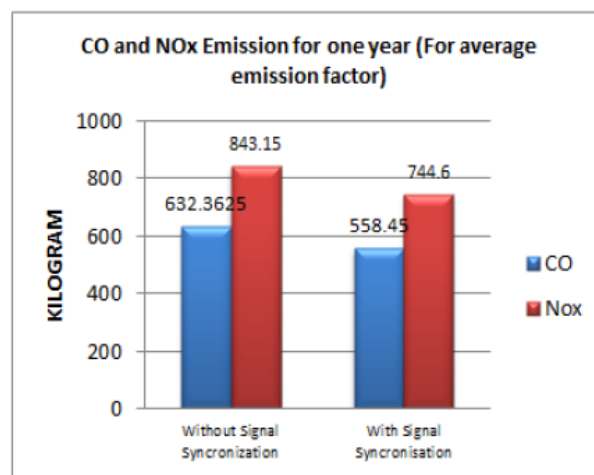


Figure 05 Emission of gas

With adoption of ITS elements, annual fuel usage is lowered by around 1.5 to 2%. ITS has built an automated train system for the Chennai metropolitan area. We are saving the environment from pollution by lowering CO and NOx emissions with this effort.

5. CONCLUSION

The rapidly growing automobile production in India, fueled by the country's population expansion & economic recovery, places a significant strain on traffic management with in country's major cities and towns. Whereas India has already begun to integrate advanced tech and concepts to mainstream traffic control, more widespread and rapid inclusion of advanced tech and conceptions into popular traffic management is required. Vehicles, infrastructure, traffic management, and traveller information services are all incorporating location and knowledge technology.

6. REFERENCES

- [1]. "Intelligent Transportation System standards program strategic plan for 2011-14" by B.Christie, Ann D., San G., Suzanne s., R.I.T.A., US Dept. of Transportation (FHWA-JPO-11-052), page 6,7,21
- [2]. "ITS handbook" world road associations, page 1,4,6,67,81.
- [3]. R. Sen, P. Siriah, and B. Raman. Roadsoundsense: Acoustic sensing based road congestion monitoring in developing regions. In IEEE SECON, June 2011.
- [4]. S. Roy, R. Sen, S. Kulkarni, P. Kulkarni, B. Raman, and L. Singh. Wirelessacrossroad: Rf based road traffic congestion detection. In WISARD, January 2011.
- [5]. <http://www.technologyreview.in/computing/37647/>.
- [6]. <http://asiancorrespondent.com/39640/isindia-waitingfor-its-longest-trafficjam/>.
- [7]. W. McShane, R. P. Roesss, and E. Prassas. Traffic engineering. In Prentice-Hall, Inc,
- [8] <http://www.abc.net.au/news/stories/2007/06/28/1964129.htm>
- [9] Chennai Metropolitan Development Authority; Draft Master Plan – II for Chennai Metropolitan Area,