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"Intelligent Transport System for Better Urban Moblity for Krishna Naka in Karad City, Taluka – Karad, Dist – Satara (Maharashtra)"

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Abstract - *In the developing world traffic congestion is the major problems faced by every developing cities. Intelligent Transport system (ITS) has been provided the platform to integrate traffic management and also overcome this traffic accident and traffic congestion issue in cites. A broad range of diverse technologies known collectively as Intelligent Transport System hold to answer many of our transportation problems Traffic accident and congestion take heavy toll on lives, productivity and waste energy, ITS help to move more safely and efficiently. The safety of road infrastructure is also enhanced by ITS solution. Traffic management can take safety concern into account while seeking the local network wide traffic optimum. Speed measuring camera system and over speed warning sign stimulating the driver to comply with safety replications by collecting data of the vehicles. In this paper ITS has solution with impact on road safety like traffic congestion and traffic accident have been collected and classified of Karad city (Maharashtra). This paper had given the strategic objectives have been evolved and evaluated according to complex criteria with analytical method This paper deals with the study of intelligent transportation system (ITS), and its application in urban management. The methodology used in this study is a practical analytical and descriptive method. The paper highlights the conclusions extracted from the studies of different systems and also gives the future scope in the field of ITS to make it more user friendly and accessible. This paper includes objectives, Methodology, Study Processes adopted for expected conclusion.*

Keywords: Intelligent Transport System, Traffic Management, Introduction, Definition, Need of Study, Area of Study, Objective, Methodology

1. Introduction and background:

Due to population growth and the emergence of economies in developing countries, and the high economic growth in developed countries, the rapid development of technology makes cities more attractive and thereby increases the growth of urbanization. Therefore, people need to satisfy their residential needs. One of these requirements is the fast and optimal transport from one place to another within a city. Therefore, urban management is seriously challenged with adoption and better management of urban transport systems. In recent year there is tremendous development has occurred in the transportation field specially in vehicular transportation. Traffic congestion and delay problems appear in many cities due to increasing demand for vehicle and transportation system .This is cause due to the loss of travel time and economic cost .Traffic accident and congestion take heavy toll on lives, productivity and wastes energy.

Last two decades have seen a lot of development in the field of transportation infrastructure even then various traffic problems are increasing day by day. This is mainly due to the increase in number of vehicles. Almost every country of the world whether developing or developed (The classification of developed and developing countries is based on International Monetary Fund's World Economic Outlook Report, April 2012), facing problems in the management of transportation facilities (Singh and Gupta, 2013). The focus of the countries all over the world is shifting from infrastructure development to the best use of the infrastructure facilities available (Singh et al., 2014). For the optimum use of the available transportation infrastructure, ITS is being developed and used all over the world.

The principal reason for traffic congestion in India is that the road space and infrastructure have not improved on par with traffic .The seriousness of problems is reflected in the report of World Bank that estimate the economic losses incurred on account of congestion and poor roads alone run as high $36 billion a year in India .The direct solution for this problem by improvement in infrastructure is constrained by space availability and other logistic problems .There is therefore an urgent need to explore and develop better traffic management options to ease traffic congestion.

The purpose of this study is to present the intelligent transport systems (ITS) and its application in urban management. The basic question is that how can ITS be used for the optimal management of urban traffic? How can ITS be along with urban management purposes? ITS standards and its functional aspects lead to optimal performance of urban

traffic management. In addition, ITS seems to be a powerful efficient tool to control transport system within a city. Congestion reduces efficiency of transportation infrastructure and increases travel time, air pollution, and fuel consumption. Problems. ITS is comprised of a number of technologies, including information processing, communications, control, sand electronics. Joining these technologies to our transportation system will save lives, save time, and save money.

1.2 Definition of ITS: Intelligent Transport System aims to achieve traffic efficiency by minimizing traffic problems it also aims to reduce time of commuters as well as enhances their safety and comfort the use of its is not only for limited traffic congestion problems ,but also road safety and efficient infrastructure usage.

Intelligent Transportation System (ITS) is a tested route to mitigate traffic congestion problems ITS can be broadly defined as the use of technology for improving transportation system . An Intelligent Transportation System (ITS) must be able to predict traffic speed for short time intervals into the future along the branches between the many nodes in a traffic network in near real time using as few observed and stored speed values as possible. Such predictions support timely ITS reactions to changing traffic conditions such as accidents or volume-induced slowdowns and include re-routing advice and time-to-destination estimations. Intelligent transportation systems have the various technologies applied, such as traffic signal control systems; variable message signs; automatic number plate recognition or speed cameras to monitoring applications, such as security CCTV systems; and to more advanced applications that gives the live data and feedback from a number of other sources, such as parking guidance and information systems; weather information; etc

The reason of the project is to reduce the traffic congestion and traffic accident by providing the proper traffic management by intelligent transport system in urban areas and make the users to be better informed and make safer and also smarter use of transport.

2. Literature Review:

In India the principal reason of traffic congestion is the road space and infrastructure have not improved on par with traffic so the ITS is the tested integrated mode which reduces the traffic congestion problem .Ali Sanaei1s and Farhad Rostami (Case Study: Miandoab)" described the "Intelligent Transportation Systems (ITS) and Their Application in Urban Management that the Creation, control and utilization of intelligent transportation systems within the city seem to be essential in today's society. The goal of this study is to present intelligent transportation system (ITS), and its application in urban management. The methodology used in this study is a practical analytical and descriptive method. According to the findings, the results of the study indicate that ITS can be used in Miandoab, particularly in its central part, in seven areas including management system of main arteries, passenger transport systems, electronic payment, information management, safety and accident prevention, ITS and driver-assistant systems.

Gabor Pauer (2017) described that the Reducing the number of road accident victims is a declared purpose of the European Union. Intelligent Transport Systems (ITS) are able to contribute to this by warning and supporting the drivers, therefore improving road safety. The aim of our research was to analyze the safety aspects of ITS systems, structuring the solutions, analyzing and exploring the opportunities for development. Strategic objectives have been evaluated and relevant processes for achieving them have been summarized. The research efficiently contributes to the utilization of development potentials of ITS systems.

Bhupendra Singh and Ankit Gupta (2015) explain that managing the increasing traffic is a big problem all over the world. Intelligent Transportation System (ITS) provides solution to these problems with the help of new technologies. ITS is an integrated system that implements a broad range of communication, control, vehicle sensing and electronics technologies to solve and manage the traffic problems. ITS is being used in the developed countries since past two decades, but it is still a new concept when developing countries like India, Brazil, China, South Africa etc. are concerned. In the present study we have studied four major parts of the ITS i.e., Advanced Traveler Information System (ATIS), Advanced Traffic Management System (ATMS), Advanced Public Transportation System (APTS), and Emergency Management System (EMS). Objective of the paper is to study various ITS architecture and model and review such models to get in-depth of their architecture. Hence architecture and developed models over the years of four major branches of ITS have been reviewed here to make a comparison analysis of different models that have been developed by the researchers in their studies. It will lead to the gaps in the knowledge which can be further studied. The paper highlights the conclusions extracted from the studies of different systems and also gives the future scope in the field of ITS to make it more user friendly and accessible.

3. Objective of the Study:

- To manage congestion on arterial and freeways
- To ensure the reliability and safety of traffic user.
- To increased and higher quality mobility.
- To upgrade current situation of traffic flow and also achieve traffic efficiency by minimizing traffic problems.
- To reduce the road accident, traffic safety, traffic control and real time information to users.

- To improve the quality of urban public transportation a current economic and social issues.
- To current economic and social issues.

4. Methodology:

Following methodology will be adopted -

- Collection of traffic data of intersection offset of the Krishna Naka from the Karad region (Maharashtra, India).
- Collection of preliminary information through literature survey.
- To describe the major problems with the help of collected data.
- The selection of proper techniques to solve the major problems of region using traffic control system method.
- Defining the problem that affect the most at intersection offset.
- Suggesting best recommendations to solve the problems faced by the Krishna Naka of Karad region by the propose intelligent transport system.

5. Study Processes

The study involves mainly the following processes:

- Determination of the objectives and scope of study
- Review of Literature
- Study of components of ITS
- Site Visit and data collection
- Data Analysis
- Suggestions for improving the traffic problems
- Discussion of the results
- Conclusion and recommendations

6. Scope of study:

This study helps to analyze and try to understand the problem of traffic congestions in urban mobility through survey. For the study traffic analysis also the necessary traffic data collected from the Karad City (Krishna Naka).This area have the intersection point so the there always the problem of traffic congestion in peak hours and normal times . ITS helps to reduce the traffic congestion problems in the areas of intersection and also provide the better traffic management.

7. Practical implication:

The study seeks to have positive implications on the area:

- The result enable to upgrade the current situation of traffic flow and it also ensure safety of the traffic user.
- It is undeniable that setting up a ITS system in our study area would be very wise decisions as it will help to lessen the congestion in KARAD area and also will benefit the town here as has smoother traffic flow.
- Improving the traffic condition which makes people safer.

8. Outline of thesis –

1. This thesis is consists with following chapters
2. Chapter one explain the definition of Intelligent Transport system, Importance of the system in urban mobility, need of the study (Problem Statement) Objectives of the Study, Study Methodology, adopted.
3. Chapter two consists of the literature review on the ITS ,Benefits of ITS, Traffic Management.
4. Chapter three defining the methodology that is used throughout study, traffic analysis and data collected of the site.
5. Chapter four explain the result discussion which are evaluated from the data.
6. Chapter five conclude the overall study and recommendations for future research

9. Conclusion :

This chapter introduced the thesis ,in this chapter introduction and background , definition of ITS ,importance of ITS, need of study , objective of study methodology and study process ,scope of the study practical implications and outline of thesis are presented

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