

TRAFFIC MANAGEMENT SYSTEM BY USING DECISION SUPPORT SYSTEM

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Abstract: As we know that traffic in road is a major concern for the country and it is difficult to control a major traffic jams for traffic police. This survey basically focuses on detection of traffic jams, sudden accidents and construction working jams on road. The framework of decision support system for traffic management based on short and medium term predictions and it includes some reflections on their evolution availability of new types of data and associated methodologies. This factor includes all about working of radar, sensors, monitoring of signal lights and managing of data at control room system. TMS is a set of strategies and tools, which allows the traffic in optimization form. The strategies may include the monitoring of radar signals, prevent congestion, less on traffic jams and increases the road safety as reducing on environmental impact.

Keywords: Radar, Controller, Simulation, DSS(Decision Support System), IRIS, RFID, CMS.

I. INTRODUCTION

Traffic is a social issue as vehicular traffic on roads is rising all over the world. To control the system it must be assured a change in the infrastructure of the traffic management, which can optimizes the traffic by using the real time data, which have detecting density, speed and capacity from different types of detectors located in traffic network. Controllers are used in a fixed predetermined schedule of inflow of traffic for each direction in every junction. Controllers are electro mechanical, which works as mechanically system operated by electrically. Radar is there, which can detect the traffic or vehicles at junction up to a particular distance. The main focus of the radar is if there is no vehicles at one side of the junction then automatically gives the direction to other sided vehicles to move first. By this method congestion or the jams be less, easily short the problems. Radars are straightforward to integrate with existing infrastructure like stoplight poles. A detector unit is there which detects the presence of vehicles and sends the information to the controller to be processed further.



Figure 1: Radar at the Traffic Signals

Figure 1 The above figure defines the working of radar as it scan the lane, if there is no vehicle then it gives the adjacent side vehicles to move without wasting the time. The data are collected and used to analyze and control the traffic management system.

II. CURRENT FRAMEWORK OF TRAFFIC MANAGEMENT SYSTEM

(a) **Monitoring:** complete or partially on a spatial level it monitors the signal and the level of traffic variable. Achieve better application of condition strategies, ability to anticipate the evaluation of strategies up for analysis.

(b) **Analysis of Strategies:** It involves the system implementation phase, a set of strategies to analysis according to traffic management tools available. We choose best strategy to analyse depending on the current frame work of the network.

(c) **Indicators as strategy evaluation:** Indication depends on the future and current state of network that are evaluated and provides the classification of optimization that evaluates and defines the flows speed, emission, number of stops, delay time, section roads or system.

III. DIFFERENT TRAFFIC MANAGEMENT SYSTEM TECHNIQUES

In this section, we will briefly review the traffic management system using other methods and techniques. The comparison has been done on the basis of the advantages and disadvantages of the techniques.

Table 1: Comparison among the techniques, models and algorithms.

AUTHORS	TECHNIQUES	DESCRIPTION	ADVANTAGES	DISADVANTAGES
[1] Amanjot Kaur	Manual control system	It includes a human presence as a traffic police, who stands in every junction and controls the traffic by using hands as a traffic signs.	He/she will able to recognize the emergency vehicles and handle the situations of traffic by hand signals.	It makes confused and meshed when more than two emergency vehicles as same time. He/she will unable to handle more traffic congestion after sometimes.
[2] R. Keerthi	Intelligent traffic management technique based on image processing	Includes cameras for capturing the image of traffic density on a road. Cameras are placed on a high pole which can cover distances and image is analyzed by a computer to detect vehicles on road.	Dynamically changes the signals at duration of time no traffic police is need to stand here.	It is not efficient at rainy days because camera cannot cover the long distance and it has unclear images.
[3] Ma, J & Fukuda	IRIS (Intelligent Roadway Information System)	1. Advanced Traffic Management System (ATMS) a software project developed by Minnesota Department of Transportation (MDT). Used to monitor and manage congestion and provides the real time data as information to detect the traffic incidents. IRIS uses the GPL license, ATMS, software tools, provides a real time information on highway conditions, maximize highway ability and reducing travelling times	It reduces the travelling time, congestion will be less so that no traffic jams will occur.	The infrastructure of this model is too high. Many software tools and applications are used. ATMS which makes cost effective for a system.
[4] Kamoji, S. N	Automatic Traffic Management	2. It includes three signals red, green and yellow. It works on the time duration as for each lane 120sec of green light, yellow for 20sec, for all the time red is on. It is on the systematic way so dynamically changes at their time.	It reduces the weakness of manual traffic system	It unable to identify the emergency vehicles like VIP cars, ambulance. The probability of delay vehicles at peak hours.

[5] Md. Rokebul Islam	Smart Traffic Control System by using Video Processing	System will detect vehicles through a set of video frames. The input of a signal processing is a format of video frames but output as a result the processing may be of either image or parameters related to image. The video detection the data gathered from adjacent nodes that would give extra accuracy during traffic signalling.	Live data can be able to check by the end users. Drivers can able to reroute the road at a time of traffic congestion.	It gets problem on rainy days. Unable to found a clear live data and image will be totally unclear.
[6] Chandana K K etall.	Congestion Control and Warning using IoT	Load cells are placed on the road, when the vehicles pass on the road the load cells convert the load acting them as the electrical signals. Traffic density as a data updated on the cloud where the end user can see the traffic by logging into the URL.	Traffic density is updated where the end users can easily be used.	It is too expensive, so many sensors are used.
[7] M K Hasan	Intelligent Decision Support System	It integrates and capturing the concept of interaction of transport system with the activity system in one Transportation System Analysis (TSA). Developed TSA as a TCMS tool for planners and decision maker	It used IDSS tools for planners and decision makers which is beneficial in the traffic control system.	Sometimes due to the fault of sensors or detectors, it fails to take right decisions.
[8] Kamoji, Ravi Bajpai	Dynamic Vehicle Management System using Fuzzy Logic	The method is used to define the directions for the vehicles. Dynamically it gives the data to the controller and information to the end users.	Wireless sensor network is used to make communicate, collects data and able to give best response to a proposed traffic light controller.	Now present time it is not reliable and unable to exchange data in between sensors.
[9] Dinesh Rotake	Intelligent Traffic Signal Control System using Embedded System	ITSC (Intelligent Traffic Signal Control) system solves the problem by giving red signal to all the traffic, only emergency vehicles will pass for a particular time period.	Genetic algorithm used to help for estimation of traffic volumes.	When more than one emergency can came then most of the time system fails. During traffic jam emergency vehicles like will struck in the junction.
[10] Sarika B. Kale	Design of Intelligent Ambulance and Traffic Control	Ambulance can change alternative route in case of congestion. It collects the information of moving vehicles by using GSM,GPS, to provide clear path RFD system will connected to microcontroller using serial protocol	Architecture for creating intelligent systems for controller road traffic by using the principal of RFID.	very critical time problems becomes complicated and involving life in that a emergency cases

IV. CONCLUSION

In this paper, we presented a framework and a review of the traffic management system. In the implementation, the data will be used as an information for the end users by the real time data. Controllers helps to monitor the signal system by the help of the radar. The radar which was fixed in top of the pole it detects the vehicles density up to distances. So by all these we can able to predict the situation of the traffic congestion. Each and everytime the data will be analyzed and detects the flow and the radar will help in giving green signals when there is no vehicle on the opposite side or adjacent side of the lane, which is time consuming for the drivers. The quantitative and subjective assessment results show

improved execution of the procedure. The upgrade tasks are performed so as to adjust the the signals time according to the radar,s decision. This system is capable to provides its best customization flow in maximum vehicledensity. Some new challenges presented by some issue that are in the current form of research and in development phase.

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