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Intelligent Traffic Management System

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Abstract— *Traffic management is auditing, planning and implementation of control plans at civil infrastructure comes. This technologies that support conveyance travel like inductive loops, wired sensors, police investigation camera etc., need high maintenance value. However, the main disadvantage of victimisation these techniques is that the dynamic behaviour of traffic densities and configurations amendment is troublesome to model perpetually. Traffic downside a lot of appears to be an adaptation downside instead of an improvement downside. Therefore this paper tries to deal with the higher than issue, and thus we have a tendency to propose algorithms that perform accommodative traffic signal management employing a wireless sensor network setup. The projected algorithms are accommodative to traffic flow at any point of roads. The paper aims at analysing ways to create an intelligent system which will mix and support a number of the present technologies of control and so cut back the common waiting time of vehicles on a junction. The results generated show that the projected methodology is effective for the control in a very real road intersection. The standard ancient approaches that decide to optimize traffic control management for a specific density and traffic configuration. That the conveyance travel is gaining importance everyplace notably in massive urban areas resulting in cut back in traffic.*

Keywords— Wireless Sensor, Traffic Management, Traffic Control, Algorithm, Traffic Configuration.

I. INTRODUCTION

1.1 Traffic Jam

A hold up may be a long line of vehicles that can't move forward as a result of there's an excessive amount of traffic, or as a result of the road is blocked by one thing. Average hold up was six miles long. Times, Sunday Times (2016). the common driver within the capital spends quite one hundred hours a year stuck in traffic jams .An accident is not required to form them, generally they're caused by near-misses, by individuals cutting one another off, by merging lanes at a construction website, or just by additional cars coming into from AN on-ramp. In traffic engineering patois, they will be caused by "incidents" on the route.The reality is that traffic jam is caused by multiple causes and here they're not within the order of importance.

1. Congestion may be a real social downside that must be resolved due to its serious effects. Congestion caused by surprising events can even result in higher statistics of conveyance accidents. Once traffic incidents occur, congestion usually seems in places wherever motorists don't expect it.
2. Too several cars for the route thanks to inadequate mass transit choices or alternative reasons.
3. Obstacles within the road inflicting a blockage and merger.

1.2 Current state of affairs

Travel at midnight is especially venturesome. Buses, patronized by many variant Indians, are convenient there in they serve virtually each town of any size. However, they're typically driven quick, recklessly, and in considerately for the principles of the road. Accidents are quite common. Trains are safer than buses, however train accidents still occur a lot of times than in alternative countries.

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So as to drive in Asian nation, you need to have either a sound Indian driver's license or a sound international driver's license. Due to troublesome road and traffic conditions, you'll want to think about hiring a neighbourhood driver.

Within and out of doors major cities, roads are usually poorly maintained and full. Even main roads of times have solely 2 lanes, with poor visibility and inadequate warning markers. On the few divided highways one will expect to fulfill native transportation traveling within the wrong direction, usually while not lights. significant traffic is that the norm and includes (but isn't restricted to) overladen trucks and buses, scooters, pedestrians, bullock and artiodactyl carts, horse or elephant riders on route to weddings, bicycles, and free-roaming farm animal. Traffic in Asian nation moves on the left. It's necessary to be alert whereas crossing streets and intersections, particularlywhen dark as traffic is returning within the "wrong" direction. Travelers ought to bear in mind to use seatbelts in each rear and front seats wherever offered, and to raise their drivers to keep up a secure speed.

On Indian roads, the safest driving policy is to continuously assume that alternative drivers won't answer a traffic state of affairs within the same approach you'd within the U.S Buses and trucks usually run red lights and merge directly into traffic at yield points and traffic circles. Cars, auto-rickshaws, bicycles, and pedestrians behave solely slightly a lot of cautiously. Use your horn or flash your headlights of times to announce your presence. It's each customary and wise.

If a driver hits a pedestrian or a cow, the vehicle and its occupants are in danger of being attacked by passers-by. Such attacks cause vital risk of injury or death to the vehicle's occupants or risk of combustion of the vehicle. It might be unsafe to stay at the scene of AN accident of this nature, and drivers could instead want to hunt out the closest station.

II. MEASURES TO SOLVE THE PROBLEM

2.1 Information

Transportation plays a really vital role once it involves achieving quick economic process of Republic of India. Over previous few decades congestion is changing into a significant issue in urban areas and is currently one amongst the severe problems on the roads. The event of the infrastructure and correct traffic management isn't ready to cope up the rise in congestion. Intelligent installation through sensors, communications, laptop technologies, etc. supply new tools within the continual effort to develop AN accessible, safe and property installation. ITS will be loosely outlined because the advanced use of data and Communication Technology (ICT) within the transportation context, is constructed upon information assortment, storage and process. During this system, we are going to use IR sensors to live the traffic density. We have to rearrange one IR sensing element for every road; these sensors forever sense the traffic thereon explicit road. Of these sensors are interfaced to the microcontroller. Supported these sensors, controller detects the traffic and controls the traffic system. The most heart of this traffic system is microcontroller. IR sensors are connected to the PORT C of the microcontroller and traffic lights are connected to PORT B and PORT D. If there's a traffic on road then that exact sensing element output becomes logic zero otherwise logic one. By receiving these IR sensing element outputs, we've to write down the program to regulate the traffic system. If you receive logic zero from any of those sensors, we've to provide the inexperienced signal thereto explicit path and provides red signal to all or any alternative ways. Here unendingly we've to observe the IR This circuit consists of four IR sensors, atmega8 microcontroller, four traffic lights. IR receiver receives IR rays that aretransmitted by IR transmitter. Unremarkably IR receiver has high resistance so as of mega ohms, once it's receiving IR rays the resistance is incredibly low. The in operation voltage of IR receiver additionally a pair of to 3V. IR transmitter appears like a diode. This IR transmitter forever emits IR rays from it. The in operation voltage of this IR transmitter is a pair of to 3v. These IR (infrared) rays are invisible to the human eye. However we will read these IR rays through camera. we've to put these IR combine in such the way that after we place AN obstacle before of this IR combine, IR receiver ought to be ready to receive the IR rays. After we offer the facility, the transmitted IR rays hit the thing and replicate back to the IR receiver. Rather than traffic lights, you'll use LEDs (RED, GREEN, YELLOW). In traditional traffic system, you've got to

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glow the LEDs on time basis. If the traffic density is high on any explicit path, then glows inexperienced diode of that exact path and glows the red LEDs for remaining ways.

2.2 Proposed Work Site

2.3 Details of Work Done

2.3.1 Passenger Car Unit (PCU):

Different categories of vehicles like cars, vans, buses, trucks, automotive vehicle rickshaw, motor cycles, bullock carts, etc. square measure found to use the common route facilities while not segregation on most of the roads in developing countries like Asian country. The flow of traffic with unrestricted mix of various vehicles categories on the roadways forms the heterogeneous traffic flow or speed and acceleration. Aside from these, the driving force behaviour of the various vehicle categories vary significantly. Thus it's necessary to form all totally different categories vehicles in one unit of traveller cars solely. It's common apply to think about the carriage because the customary vehicle unit to convert the opposite vehicle categories and this unit is termed carriage Unit or PCU.

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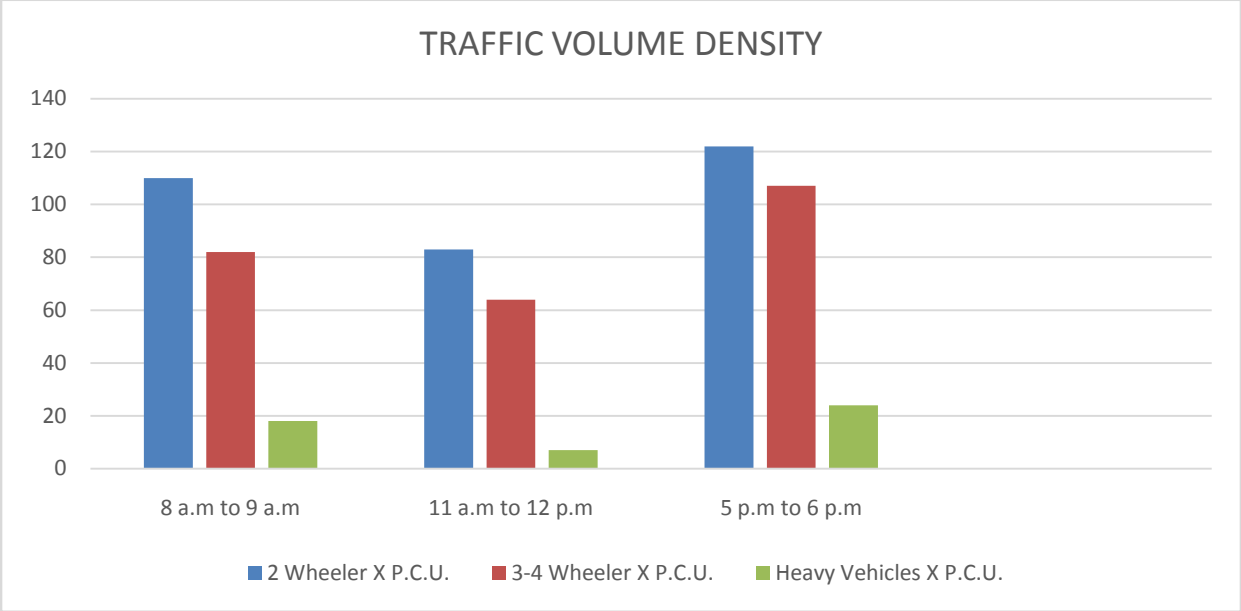
Table No. 2.3.1

SR. NO.	VEHICLE CLASS	P.C.U
1.	TWO WHEELER	0.5
2.	THREE WHEELER AND FOUR WHEELER	1.5 AND 1
3.	HEAVY VEHICLES	3



TOWARDS JIVDANI ROAD
Graph No.2.3.1

III. CONCLUSION

This paper therefore tries to address about the issue, and hence we propose algorithms which perform adaptive traffic light control using a wireless sensor network setup. The paper aims at analysing methods to build an intelligent system that can blend and support some of the existing technologies of traffic control and therefore reduce the average waiting time of vehicles on a junction. The projected algorithms are reconciling to traffic flow at any point of roads. The results generated show that the projected technique is effective for the control in a very real road intersection.

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