A SURVEY PAPER ON AUTOMATIC DIM BRIGHT HEAD LAMP SYSTEM AND NOISE FREE HORNS IN AUTOMOBILES USING V2V COMMUNICATION TECHNIQUE

[1]Dinil Davis, [2]Joshwa George, [3]Kiran. M. R

[1,2,3]Research Scholars
Sahrdaya College of Engineering and Technology, Kodakara

Abstract: This paper is a survey on automatic dim-bright headlamp systems and noise free horns in automobiles using V2V communication using DSRC technique. While driving bright light from the inverse vehicle causes unsettling influence to the next driver and may prompts mischance's . With a specific end goal to maintain a strategic distance from this issue we are wanting to actualize a framework which associates vehicles utilizing vehicle to vehicle communication(V2V) by which two vehicles can be associated each other and the bright light of a vehicle can be changed to dim light by the driver in the inverse vehicle. This framework can likewise be utilized as a part of vehicles for diminishing the utilization of horns. A little beep sound is utilized inside the vehicles rather than horns when the other vehicle applies the horn..

Keywords: DSRC, V2V Communication

I. INTRODUCTION

V2V Communication

Vehicle-to-vehicle (V2V) is an automobile innovation intended to permit automobiles to "talk" to each other. The frameworks will utilize an area of the 5.9 GHz band set aside by the United States Congress in 1999, the unlicensed frequency additionally utilized by WiFi.

V2V is right now in dynamic advancement by General Motors, which showed the framework in 2006 utilizing Cadillac vehicles. Different automakers dealing with V2V incorporate Toyota, BMW, Honda, Audi, Volvo and the Car-to-Car communication consortium.

V2V is otherwise called VANET (vehicular ad hoc network). It is a variety of MANET (Mobile ad hoc network), emphasis being now the node is the vehicular. In 2001, it was said in a publication that ad hoc networks can be shaped via autos and such systems can defeat blind spots, keep away from mishaps, and so on. Throughout the years, there have been impressive research and activities around there, applying VANETs for an variety of uses, running from security to navigation and law enforcement.

DSRC

DSRC is intended to be a complement to cellular communications by giving high information transfer rates in conditions where minimizing inactivity in the communication link also, disengaging generally little communication zones are important. DSRC is otherwise called WAVE (Wireless Access in Vehicular Environments). Furthermore, an IEEE task group is presently dealing with the IEEE 802.11p standard for both the PHY layer and the MAC layer of DSRC. The essential motivation behind why the MAC and PHY layers are being created under 802.11 is to guarantee that the standard stays stable after some time. One of the referred to issues of the original 915 MHz DSRC is that couple of usage totally taken after the standard.

Rather, the majority of the original DSRC usage depended on exclusive arrangements. Understanding that exclusive usage were one of the fundamental driver of 915 MHz DSRC's absence of accomplishment, the new 5.9 GHz DSRC is an open standard. The 5.9 GHz DSRC conquers a significant number of the shortcomings connected with 915 MHz DSRC. To start, an expanded measure of data transfer capacity is accessible for 5.9 GHz DSRC. Likewise, the 5.9 GHz DSRC range is made out of seven channels of 10 MHz each. One channel is saved for the control channel and six extra channels are service channels. While, 925 MHz DSRC standard just backings the utilization of maybe a couple channels. Next, 5.9 GHz DSRC underpins fast information exchanges extending from 6 Mb/s to 27 Mb/s. Under certain conditions, the information rate can reach 54 Mb/s when two service channels are consolidated to structure one 20 MHz channel.

DSRC Protocol Overview

Dedicated Short-Range Communications Protocol is a multichannel wireless protocol, still a work in progress , that is based on the IEEE 802.11a Physical Layer and the IEEE 802.11 MAC Layer . It works over a 75 MHz authorized range in the 5.9 GHz band allocated by the FCC for the backing of low latency vehicle-to-vehicle and vehicle-to-infrastructure communications. The inspiration driving the improvement of DSRC is based for the most part on the requirement for an all the more tightly controlled spectrum for augmented unwavering quality. But even with an authorized band ,a few issues emerge , for example, reasonable access to all applications , including priority

scheduling pf traffic between various application classes (safety over non

- safety).Unlike 802.11 , multi-channel coordination is a basic ability of DSRC.DSRC is like 802.11a , however there are still some major differences.

II. METHODOLOGY

In [1], To improve the execution of the vehicular networks, a novel network architecture utilizing the cross-layer paradigm is introduced. The architecture is called Smart Vehicular Ad-hoc Network SmartVANET architecture complies with the DSRC channel arrangement. The architecture isolates street into portions and allots an administration channel to every section. The SmartVANET joins a portion based grouping method with a cross breed Medium Access Control (MAC) component

(known as the SmartMAC convention). Utilizing cross-layer mix, SmartVANET likewise gives an answer for broadcast storm issues and offers scalability.

Advantages:-

- SmartVANET architecture utilizes physical layer versatile equalization method to address channel weaknesses.
- SmartVANET utilizes non-adjacent SCHs in adjacent portions. Along these lines, it maintains a strategic distance from co-channel and contiguous channel interruption.
- SmartVANET is DSRC agreeable and productively uses the DSRC range. It also supports multichannel operation pro-posed in IEEE 1609.4 standard

In [2], The system uses Intersection Collision Avoidance (ICA) application. This is a vehicle-to-vehicle (V2V) dedicated Short-Range Communications (DSRC) to share safety critical state information. safety is accomplished in potential collision situations by controlling the speeds of both vehicles with programmed brake and throttle orders. Programmed orders can never bring about the violation of predefined upper and lower speed limits.

Advantages:-

- The ICA prevent collisions at intersections after normal traffic control mechanisms have failed.

In [3] the proposed vehicle communication management protocol utilizing DSRC and Repeater to address the core issues of vehicle safety and local dangers. The vehicles can openly connect for bringing advantages of more prominent security and efficiency. This communication can be utilized to avoid vehicles Collision, transmit data about traffic.

Advantages:-

- considering the Traffic management in complex junctions where we can strive for multipath path lane also giving need for emergency vehicle to clear route at speedy time and more separation before they approach specific spot.

In [4], The protocols are Dedicated Short Range Communications (DSRC) multi-channel architecture. Scientific limits on execution of the proposed conventions are determined. Simulations are directed to evaluate the gathering reliability and channel utilization of the conventions. The affectability of the convention execution is assessed under different offered traffic and vehicular activity streams. The outcomes demonstrate the methodology is practical for vehicle security messages in DSRC.

Advantages:-

- The 250 byte message size is satisfactory. The 140 interferer number relates to a 4 lane highway at limit stream, with speed between 50 to 55 mph, and a message scope of 150 meters. At these speeds all light-duty traveler vehicles can stop inside 150 meters.

In [5],similarity oriented logic simplification (SOLS) strategy is proposed to completely re-use the current equipment and behavioral model is simulated using XILINX 14.1 programming and yields are confirmed utilizing XILINX VIRTEX-5 kit. This encoding method completely supports DSRC standards of America, Europe and Japan. This paper proposes the procedure to move forward dependable execution over existing DSRC systems.

Advantages :-

- The SOLS system disposes of the limitation on hardware use by two main methods:-
- area compact retiming and balance logic-operation sharing. The area-compact retiming relocates the hardware resource

In [6], it comprises of three units, the control unit, monitoring unit, and vehicle units which depend on a wireless network. The ARM CORTEX M3 microcontroller is utilized for controlling all the operations. It can be actualized in five cases:- Forward hazard warning, Traffic light timing display, Intersection collision warning, Road speed limit cautioning and Emergency vehicle cautioning.

Advantages:-

- can accomplish the best execution, prompting more effective utilization of wireless bandwidth.
- Receiving this in vehicular networks can both stay away from transmissions of emergency messages, wasting bandwidth due to unnecessary rebroadcasts and keep emergency messages from transmission impacts brought on by serious packet contention.
- This system helps the driver to maintain a strategic distance from backside impacts in low speeds.

In [7], Ad-hoc On-Demand Distance Vector (AODV) and Optimized Link State Routing (OLSR) routing protocols

utilizing 802.11a and 802.11p as a part of a reasonable urban situation. For this correlation, five execution measurements are considered: Path Availability, End to-End Delay, Number of Created Paths, Path Length and Path Duration. Simulation results show, that for the vast majority of the metrics evaluated, OLSR beats AODV when 802.11p and that 802.11p is more productive in urban VANETs.

Advantages:-

- OLSR has better execution that AODV, mainly when 802.11p is utilized demonstrating that OLSR can be an option to use in VANETs.

In [8], It manufactures a model of programmed headlight dimmer. This naturally switches the high beam into low beam in this way diminishing the glare impact by detecting the drawing closer vehicle. It additionally kills the requirement of manual exchanging by the driver which is not done at all times.

Advantages:-

- Here a simple circuit is used to control the head lamps in automobiles.
- It helps to reduce the eye problems caused by light glares.

III. DRAWBACKS

- [1][2][3],
- [4], This analysis has some limitations. The channel model is memoryless.If a truck appears between two cars and remains there disrupting communications, for several seconds, the probabilitiesof successive failures will be worse than predicted by these analyses.Thus the slow fading characteristics of the vehicle-vehiclechannel need to be better understood. Secondly, the CBT is only anindirect means to estimate the accommodation of non-safety traffic.
- [8], Here its not possible to connect the vehicles each other.Can be used only for switching the bright light to dim light.

IV. CONCLUSION

In this survey paper, we have taken a survey on all projects which uses the Dedicated Short Range Communication(DSRC) as the technology for communicating between nearby vehicles. From this survey we noticed that DSRC is used for applications like road adaptive overtaking, traffic control, vehicle to vehicle collision etc .The proposed system aims to communicate between nearby vehicles using DSRC and control the headlamp of the opposite vehicle inorder to avoid the eye problems by dimming the bright light of the opposite vehicle.

REFERENCES

[1] Mahalle N.S. (2012) ,"A DSRC based SmartVANET Architecture. International Journal of Wireless Communication", ISSN: 2231- 3559 & E-ISSN: 2231-3567, Volume 2, Issue 2, pp.-35-37..

[2] M. R. Hafner, D. Cunningham, L. Caminiti and D. Del Vecchio, " Automated Vehicle-to-Vehicle Collision Avoidance at Intersections "

[3] R. Thenmozhi, Dr. S. Govindarajan**,"** Safety Related Services Using Smart Vehicle Connections", International Journal of Applied Engineering Research ISSN 0973-4562 Volume 11, Number 4 (2016) pp 2384-2387

[4] Qing Xu, Tony Mak, Raja Sengupta ," Vehicle-to-Vehicle Safety Messaging in DSRC"

[5] K.Srinath, V.Prasad ," Design and Implementation of DSRC Encoders for Efficient Hardware Utilization", International Journal of Innovative Research in Science,Engineering and Technology Vol. 4, Issue 7, July 2015

[6] S.Senthazhai1, A.Vaishnavi," Road Adaptive Overtake Assistant Systembased on Dedicated Short RangeCommunication" International Journal of Advanced Research in Electrical,Electronics and Instrumentation Engineering Vol. 4, Issue 4, April 2015

[7] Ederval Pablo Ferreira da Cruz1 and Bruno dos Santos Silva2," Performance Comparison of AODV and OLSR using 802.11a and DSRC(802.11p) Protocols in urban Vanets "

[8] Muralikrishnan.R," Automatic Headlight Dimmer a Prototype for Vehicles, International Journal of Research in Engineering and Technology eISSN: 2319-1163 | pISSN: 2321-7308