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VANET Data Dissemination an Emerging Technology: A Survey

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***Abstract*—** Vehicular Ad hoc Networks (VANET) is an emerging technology and is type of an ad hoc mobile network which offered facilities like security, traffic proficiency, driving ease, traffic management services etc. with the help of vehicles communications. Traffic information is especially useful for the driver during driving, such as an accident alert or else traffic jam alert. In ad hoc vehicle networks, data transmission is usually performed by multi hop communication in which high-speed vehicles act as a data carrier. Vehicles are forced to navigate a defined route, depending on the route layout and traffic conditions. In an ad hoc vehicle network, delivering data to multiple stores is a very complicated job because of the high mobility and frequent disconnections that occur in vehicle networks. The biggest challenge in ad hoc vehicle networks is to gather information such as accidents, speed limits, road obstacles, road conditions, traffic conditions, commercial advertising, etc. for safety and convenience. In many diffusion techniques, the vehicle transports the package until it finds another vehicle heading towards destination and at that point passes the package to that vehicle. In this article we surveyed some research paper based on predictive data dissemination and try to put forward their research work. The surveyed research papers are based on different techniques and tools for data dissemination protocols.

***Keywords*—** Multi-beam adaptive array (MBAA), Distributed low-redundancy information sharing algorithm (DLRA), Road Side Units (RSUs), Receiver-oriented multiple access (ROMA)

I. INTRODUCTION

Vehicular ad-hoc network or VANET technology is for mobile vehicles that represent network nodes to form a mobile network. It is branded by fast varying topology, high motion, high speed and short one-period exchanges. It was introduced that this new approach will navigation at VANET. To address this, it was offered that a new networked road positioning system vehicle, with or without precise GPS signals, work with VANET to exchange position and distance info and mutually calculate the exact position of all vehicles in the network. The purpose was to build a road and emulate vehicles. It gives us an idea of how vehicles navigate the network to showcase the traffic affecting the vehicle and how to deal with heavy traffic and ways to overcome current traffic by choosing different routes. This is a very useful use of VANET to help analyze routes by vehicle, how to complete the journey in the shortest time, and the finest route with low traffic. Network Simulator 2 (NS2) is open source and NS2 is a separate event simulator for network survey. Ns2 delivers significant provision for simulating TCP, routing protocols and multicast protocols on wired and wireless networks, microscopic traffic simulation in multiple models. It permits you to model just how a specific traffic request, consisting of individual vehicles, moves along a specific road map. The organization of paper is that, section II has the summary of research papers based on data dissemination included for survey, section III describing the related comparison of these articles and last section IV is explaining the conclusion.

II. SURVEY OF RELATED RESEARCH WORK

In this section, we are describing survey of some research works in the field of VANET data dissemination.

G. G. Md. N. Ali *et.al* [1], proposed that in traditional multi-RSU VSETs, the RSU can transmit only one item of information per click for broadcast. It confines bandwidth utilization. It also impedes achievement lower system response time that is important for the driver to quickly determine traffic information from the RSU to the board. With network coding, servers can master issuing it, but at a higher price of transporting the vehicle cache data all time, they generate a demand. In this paper, they have gone beyond these overhead network coding creates a mechanism to move from cache to interconnected RSUs also manually control the cache update mechanism. They have designed an approach to serving a coding-based demand. Simulation results show this with mixing of their anticipated approach, multi-RSU performance. VANET can be improved significantly from the traditional scheme.

F.D.da Cunha *et.al* [2], proposed that the advent of a network of vehicles includes vehicles equipped with the ability to create wireless communications and organizing themselves into a cooperative network opens up a lot of applications, which can make users more secure, more

efficient and more enjoyable. VANETs are expected to become the most significant application of portable ad hoc networks. The different characteristics of VANET lead to definite networking complications, requires the proposal of a fully disseminated protocol. VANETs present additional tests to various protocols that already exist in portable ad-hoc networks. Specifically, vehicle motion creates a dynamic scenario with remarkable connection speeds and therefore very short life span of several lanes. In this case, protocols those need to know the state of the system are incompetent due to the regular network deviations. Besides, VANET bids may require a different protocol stack. They hoped that the insights described here would help designers and protocol engineers improve this type of network service and help motorists travel safely.

Yichen Zhang *et.al* [3], proposed that Modified MAC protocol based on non-collision arrangement protocol for improvement information exchange performance in routed ad hoc networks with multi-beam adaptive array (MBAA) antennas. By swapping the package ID. In openings, while sharing information can expressively reduce data, the protocol also lessens time charges and energy consumption. The replication shows that their method can be improved the success of sharing data and providing ways to address analogous issues. Because Distributed Lower Redundancy Information Sharing Algorithm (DLRA) receiver has been improved based on receiver oriented multiple access (ROMA). The main idea of this protocol is to add the subsets to the basic Roma scheduling access phase. It works, but it inadvertently complicates the protocol. However, the proportion of laid off data is still comparatively great. A further well-organized algorithm for system performance had better be explored by information sharing.

Lei Liu *et.al* [4], proposed that in the trial replications, they used unlike performance indices to estimate the planned algorithm equated to some characteristic protocols. The numerical outcomes tell that was planned algorithm attains improved performance in terms of packet delivery ratios, info coverage, and middling transmission delay. The challenge of designing effective information distribution in VANETs is of high importance for enlightening driving security and traffic efficacy. In contrast, entertainment information can first be merged with the cluster head and then passed on to the next jump, which can greatly improve channel competition and spectrum use. Density-based advancing probabilities might indeed disclose the influence of traffic congestion on network performance. A real interfering model can additionally discover the impact of traffic concentration on network performance, given both concealed and bare terminals.

Celimuge WU *et.al* [5], proposed FUZZBR (Fuzzy Broadcast), a fuzzy logically. The procedure uses a combination of these metrics using fuzzy logic. FUZZBR resends packets when retransmission fails, using a light retransmission mechanism to ensure reliability. After receiving a packet, a node rebroadcasts a packet only if the packet is included in the relay node list itself. Vehicles exchange information through greetings. Each vehicle inserts location information into the welcome message. Since it is possible to get this location information from GPS, it is assumed that each node knows its own location and route map information. There is a selection of relay node. Selecting the outermost node as a relay node reduces the quantity of relays. Due to the weak signal, the transit node may lose packets. Relay nodes may move beyond the transmission range of the sending node due to node movement. FUZZBR used a fuzzy logical method to identify the relay nodes that gave the top outcomes. At FUZZBR, all node estimates its neighbours in terms of distance, motion and signal power by exchanging healthy mails. The minute a node takes to transport a packet, the node uses incomprehensible reason to estimate the regular fitness relay value for each neighbour based on distance, motion and signal power. The node picks a relay node for all required broadcast zone. The process of converting numbers to fuzzy values using a fuzzy relationship is called "fuzzification". In this paper, FUZZBR parameters are selected built on complete performance in different network environments. The performance of FUZZBR can be enhanced if different parameters are used in different scenarios. Future work will address adaptive methods that can enhance FUZZBR constraints based on the network environment and application necessities.

Abeel Akhtar *et.al* [6], integrated real-world road topology and real-time data derived from the actual Performance Measurement System (PeMS) record in a microscopic model of mobility that generates real-time highway traffic. They used more realistic comparisons of this sophisticated performance with the most common simpler channel model, together with unit disk and log normality shading model and proposed a barrier-based channel model. A review of key metrics shows this both normal and unit disk models are not practical VANET topology features. So, they suggest a match mechanism for tuning lognormal model parameters. Rendering to that density model and correlation model which takes into version the progress of connection features over time from the anticipated method is proven to provide a good match due to high computational costs and difficult implementation obstacles, basic model. Also, a "perimeter mechanism", is used in which the receiving node controls the signal strength. If it is below the threshold, which means that the response and response message is most likely not performed, the recipient will automatically retransmit the data. The outcomes showed that the proposed procedure mitigated the problem of storm transmission while maintaining a relationship with delivery in parallel with the flood plan. Therefore, the planned procedure is a potential contender for an event-based resolution for VANET delay tolerances.

Brij Bihari Dubey *et.al* [8], discussed some of the techniques available that are based on pull and thrust mechanisms. One mechanism addresses the concept of infusion and buffering of data that can effectively utilize

the limited available bandwidth and increase network penetration. By executing the data, the data is occasionally transmitted to the street, and the interconnection enables this information to be transmitted not only to vehicles approaching on this road, but vehicles traveling at intersections and approaching intersections with this road. you can use. VANETs has to overcome many provocations regarding media access control, data aggregation, data validation, data distribution, routing, network congestion, performance analysis, privacy and security. Popular data (push data) needs extra bandwidth than less common information (pull data). Protocol changes because all protocols have their strengths and weaknesses, depending on specific road conditions and vehicle conditions. At the same time, for limited bandwidth, make sure that the protocol used does not allow redundant packets so that the largest data can be spread over the network. This is a big challenge. In the future, they will work on both portable and streaming data, try out algorithms on the device that can reduce redundant data transfer, deliver maximum data on the road and use available bandwidth effectively. Make it available. In this case, the vehicle will meet the selection criteria for participating in the broadcast.

Linfeng Liu *et.al* [9], motivated their research by the subsequent observations: (a) The movement of MONs communication devices i.e. managed by the carrier (human), and motion of people is usually governed by industrial habits that are stable over the long term. Therefore, the direction and extent of travel in diverse types of areas (such as housing, commercial, landscape, or manufacturing) are quite diverse. (b) Due to the random nature of node motion, the information allocation issue is mathematically mapped to a sequentially determined problem. Markov's decision-making scheme is also a desirable decision-making technique and is well suited to the order of problems. They have improved the domain-based data allocation method (RTDDM), especially with regard to action decisions and message exchanges, and some hypothetical analysis has been performed on RTDDM. In addition, additional simulation outcomes are provided to more clarify the benefits of RTDDM. They also proposed a data distribution method (RTDDM) based on the MON domain of the domain type. In particular, RTDDM uses a Markov decision model to regulate a relay node with high area weight in the home region. Their research explores data dissemination issues related to improving MON delivery rates and reducing delivery delays. Region type correlations and region weights are reviewed and used to select the data owner's relay nodes. Next, the Region Type Dissemination Method (RTDDM) has been projected. In RTDDM, the correlation for the region type is calculated first, and then the relay nodes are determined using a Markov decision model. Simulation results suggest that RTDDM may advance delivery rates it also reduces delivery delays. It is particularly suitable for MONs with various types of node-specific contact areas, for example pocket command networks consisting of human-transmitted portable devices.

Rakesh Shrestha *et.al* [10], projected a new scheme for the dissemination of reliable information on events and their mitigation i.e. editing and hoax attacks. Their system efforts to overwhelm these outbreaks by swapping information on the confidence level of neighboring automobiles and using a two-step protocol. In the initial phase, each automobile tries to discover the confidence level of a neighboring vehicle (called the probability of telling the truth). The probability of telling the truth is projected based on the middling of the sentiments of neighboring automobiles. It also applies a new grouping method that reduces the impact of harmful automobiles on this estimate by eliminating external views. Once the probability of telling the truth is determined, using a threshold random walk (TRW) threshold for majority group opinion obtained in the first step, the second step is to increase the reliability of the particular message. They identify and distribute reliable event messages only to nearby vehicles. Introduced modified *K* means a grouping algorithm that reduces the outcome of malevolent automobiles on the confidence levels (i.e. the probability of truth) of other automobiles. Simply putting, the problem of node trust is solved by a grouping algorithm modified in their projected system. At the subsequent stage, the message reliability matter is set by implementing the modified TRW to the mails received from nearby automobiles along with the node's trustworthiness info. They compared the proposed scheme with real-time content validation (RMCV), simple voting and TRW-only arrangements by recreation. The recreation outcomes show that their projected system has a lesser probability of an incorrect decision than other systems and a short message overload equated to the RMCV scheme. The recreation outcomes also show that their projected system can effectively handle a message modification attack and a deceptive attack if the amount of benign automobiles is higher than the amount of harmful automobiles. Their system has the added benefit that the trust choice of a particular message is completed in an infrastructure-free atmosphere without the use of a public key infrastructure (PKI). They assumed that harmful vehicles were evenly disseminated on the streets. Though, this hypothesis might not apply if harmful automobiles collide in groups to surge their impact on nearby automobiles.

Shuja Ansari *et.al* [11], proposed the concept of a security Algorithmic application identifier that has been evaluated and investigated for the effect of a municipal multi-cellular radio environment utilizing multi-hour faded channels and background traffic. The planned algorithm is a procedure that runs on the Vehicle Security Application Server (VSA) processed in the Algorithm. When automobiles start transmitting, the packet is sent via CN from eNodeB to the VSA server. This package includes the vehicle safety message (VSM) by location in the vehicle. Immediately the server receives these messages, it identifies all the automobiles offered by the network and creates a virtual geographic map of the areas served. While receiving a packet, the VSA server will extract SAI data from the received packet. SAI data will be plaid against the database

deposited on the server. With this ISC, the server recovers the frequency of the BFi light signals and the awareness range Ri request of the application that the vehicle i uses. Use dynamic adjustment of transmission parameters to fully meet stringent vehicle application necessities, minimalizing delays and decreasing system load. Extensive system-level updates show the important effects of channel shutdown and operation, as well as their impact on received signal quality, reducing the likelihood of end-to-end delays ≤50ms for different levels of awareness from [19% → 30%] and [9% → 17%], respectively. By reviewing the influence of the alertness band, it was detected that with a radius of up to 1000 m meant for 1 Hz, 500 m meant for 2 Hz and 250 m meant for the 10 Hz frequency signal, the scheme worked well. With the support of these outcomes, the DRI algorithm has been planned and executed. The probability of an end-to-end delay of lower than 100 ms has amplified by about 20% and good downstream power has decreased significantly from 21.67 Mbps → 13.76 Mbps for 150 automobiles. In addition, the effect of background traffic is also been taken into account. The outcomes show that the scheme is somewhat affected by unvarying background traffic. Though, the probability of end-to-end delay (≤50ms) still remains pleasingly above 85% using ISC. In this document, it is also proposed to include SAI in MAC level controls that produce D2D communication within the vehicle. After modeling this system, it was found that as many resources and system requirements were being met with 50 other automobiles, growing the capacity of the LTE vehicle network. In conclusion, they planned to mix the SAI incorporated in the MAC layer into a heterogeneous network with DSRC, while discovering the network intersection in 5-cell vehicle communication networks, completing the mutual weaknesses and strengths for meet the vehicle network requirements.

P. Shane Crawford *et.al* [12], emphasized on understanding community vulnerability and measuring change over time is important for community leaders, decisions made by government, manufacturing and community stakeholders when developing mitigation plans. A methodology is provided for quickly collecting big passive datasets in local and temporary formats. Extreme Events Web Browser was formed to store collected data in local, temporary, and accessible formats, and add value to the data for analysis. The Extreme Events Video Capture instrument is designed to simplify the taking out of image data from 360° videos that are collected passively and mounted on vehicles. A deep learning application has been created that uses the Google TensorFlow system with an initial image classification scheme to retrieve data from take-out image information. The gathered data was geographically located, uploaded to the Extreme Event browser, and images of the building were taken out from the video. Many deep learning models are coached to categorize images of a building as raised, inappropriate, or unidentified. Island buildings were identified manually and a geographic analysis of the results of the deep-sea model was offered. A method to quickly identify where classification errors happened was offered shows how the geographical nature of the proposed methodology simplifies an iterative method towards building deep learning models. The findings deduce that approaches to data gathering, storage and recovery support the creation of deep learning models. A deep learning category model is designed to assess the weakness of this system and to seek temporarily monitor changes. Weakness or the extent of accidental injury can increase community bounciness. The capability to hoard large, passively collected information in Web Viewer Extreme Events and extract data from datasets using automated methods to evaluate and measure deviations in these separate, codependent and disaster-sensitive schemes will deliver info where and when required in the form that is obtainable to the wider research section, Further to community heads and participants to meet the requirements of the NSDF commendations and the major tests of the NSTC.

Fuad A. Ghaleb *et.al* [13], proposed a contextual scheme for detecting behaviour. The system comprises of 4 phases, attainment, distribution, examination and discovery. The result of each stage is castoff as input for the subsequent stage. An enhanced Klaman filter algorithm for an active and diverse noise atmosphere is castoff to evaluate mobility info in the attainment phase. Therefore, the driver-aware motion data exchange system is castoff to successfully and proficiently share the motion data of nearby vehicles with their doubts, to ensure the proficient quality of the information distributed with the competent use of the vehicle permeability. In Phase three, constancy and credibility representations, both for automobiles and framework, are built online and restructured immediately. An innovation error of the Kalman filter algorithm is cast-off to create a time coherence time for each vehicle based on the information obtained using the Box and Whisker Plot and is castoff as an automobile coherence representation. To minimize false alarms, each new message received is estimated based on deviations from the representative vehicle model time model. Thus, the global reference time-consistency model was created by means of a Hampel filter using the Box and Whisker Plot results of entire nearby automobiles and was cast-off as a framework reference. Likewise, multiform persuasion representations were created using Hampel filters for framework and specific vehicles using the reference constancy representation. Lastly, a message is regarded wrong if it differs greatly from the reference to the worldwide framework. The outcomes of a framework-sensitive recognition representation decrease wrong alarms and upgrade detection rates. Misbehavior contextual data collection has many rewards over event-driven approaches for detecting misconduct due to its skill to distinguish and block several kinds of attacks in the early phases. The problem of the inefficiency of current data-driven misconduct schemes is related to the inadequacy of managing the severe and lively framework of VANET. A contextual system was developed to identify misconduct based on data that contains models of consistency and

adaptive credibility. These representations assist as a locus to represent the framework of the vehicle. Therefore, deviating from this framework is observed bad behavior. The experiment displays that the performance in F-measure is greater than 80 percent in every circumstance, which indicates the expected system is efficient & solid. The advantage of the projected resolution is that it operates autonomously, nearby in real time and in an atmosphere that prevents privacy. Though CA-DC-MDS fruitfully detects various kinds of framework aware attackers who exploit framework info regardless of the framework condition, the framework sensitive attacker can still exploit framework info without detection due to the great likeness b/w the data and the data of the framework attackers. They could gradually fine-tune the framework info fundamentals. Hence, it is imperative to distinguish such attacks at an initial stage.

Prabhjot Singh *et.al* [14], proposed, a clustering algorithm based on fuzzy logic was castoff to create hierarchical vehicle sets that amend a prevailing predictive clustering system to ensure competent data distribution. A novel approach, called secure data distribution system for predictive clustering built on the vehicle relay network, has been developed by integrating vague decision systems and a protected vehicle authentication mechanism to enhance the prevailing resolution. In recent years, there has been a large increase in the capacity of the vehicle network for data processing, which builds it a fascinating study area. Integrating the vehicle network with next-generation wireless communications machineries offers greater luxury and security to the occupants of the vehicle. The network topology of vehicle networks is extremely lively in nature, resulting in heavy congestion due to lack of chief jurisdiction and increased network traffic. Though, maintaining QoS (quality of service) without negotiating serious parameters is a demanding job in vehicle networks. Therefore, it is necessary to have an intellectual data distribution technique that reduces the difficulty of the network by giving a mainstay construction that aggregates a node into many groups. The proposed plan was enhanced by incorporating ECC-based safekeeping to avoid general attacks against in-vehicle relay networks. Multiple-stage assessments will determine the success of the proposed system. The performance evaluation of the project started included extensive simulations to verify the effectiveness of the proposed system with regard to longer group life, which improved the simulation stability and reduced self-esteem and indicated greater reliability. Used and evaluated. This system assists to reduce data loss and increase security in vehicle transport networks. It is useful for real-time applications that provide timely data such as emergency warnings, critical passenger data and traffic data.

Craig Cooper *et.al* [15], identified the need for exploitation more exclusive features of the VANET atmosphere an optimally resolve the issue of creating and maintaining a cluster in VANET. The suggested indications include more extensive use of machine learning techniques, application of two directions the flow of vehicles in the cluster creation procedure, and greater participation of fixed units along the way. While these occasions are noteworthy, significant development improve futuristic of the VANET clustering practice it is hindered by an amount of important and central ones shortcomings in the current literature, which are summarized and which must be properly talked if they are strong and dependable VANETs must make progress to and from recreations large-scale hands-on application. Gateway selection metrics and cluster deployment approaches are also in few cases the same, frequently overdue to the MANET line of a particular grouping technique. Latest strategies that make full use of unique mobility models, channel behavior available, energy volume and dispensation control in VANETs, can possibly offer far-reaching performance beyond what is possible with more conventional methods, especially in the realistic conditions of a municipal VANET channel. Improved use of predicting vehicle behavior, using the road information on the assembly and assistance of road units also appears plausible to support with grouping. There are strong chances to take advantage of expands the range of metrics, especially to facilitate routing ones that take advantage of the exclusive features of VANET Atmosphere. Group strength and stability can be enhanced with somewhat uncomplicated weight modulation practiced to elective cluster leader metrics by number lane on the street where the automobile is presently located. There is an obvious break between the new results in Research on VANET w.r.t ecological dependency and non-stationarity of network constraints e-validation procedure cast-off in the huge bulk of clusters exploration that makes him very optimistic and unrealistic the hypothesis of signal broadcast between nodes. Simulations showed a critical link between channel models and performance clustering - significantly ignoring this connection reduces the real-world relevance of simulation studies in cluster performance. Why clustering procedures are expectable and in exercise it is reliable, crucial that investigators switch to conduit representations that properly replicate genuineness of hard signal propagation atmosphere in that they must work it. Precise exhibiting of channels, for example the developed representation in, they could detect issues with certain enterprise picks allow investigators to upgrade the heftiness of the proposal algorithms. It will encourage the progress of pioneering methods to the enterprise of the VANET procedure and permit investigators explore novel technology applications with larger one's assurance in the legitimacy of their outcomes.

III. RELATED COMPARISON

Below tables shown the tools and technologies used by various authors in their research publications (those taken in consideration for our survey [1] to [15]) for proper data dissemination in vehicular ad hoc communications. Table 1 showing the technologies used and Table 2 showing the tools used by survey.

Table 1. Technologies Used by [1] to [15]

	Technologies Used
G. G. Md. N. Ali *et.al* [1]	RSU
F.D.da Cunha *et.al* [2]	GPSR
Yichen Zhang *et.al* [3]	DLRA
Lei Liu *et.al* [4]	CPB
Celimuge WU *et.al* [5]	FUZZY
Abeel Akhtar *et.al* [6]	VADD
Tomo Nikolovski *et.al* [7]	DTP-DDP
Brij Bihari Dubey *et.al* [8]	VADD, RSU
Linfeng Liu *et.al* [9]	RTDDM
Rakesh Shrestha *et.al* [10]	RSU
Shuja Ansari *et.al* [11]	SAI
P. Shane Crawford *et.al* [12]	TIGER
Fuad A. Ghaleb *et.al* [13]	CA-DC-MDS, RSU
Prabhjot Singh *et.al* [14]	FUZZY, CH
Craig Cooper *et.al* [15]	FUZZY, CH

Table 2. Tools Used by [1] to [15]

	Tools					
	GPS	DSRC	ALOHA	NS2	SUMO	CNN
G. G. Md. N. Ali *et.al* [1]	Y	N	N	N	N	N
F.D.da Cunha *et.al* [2]	Y	Y	Y	N	N	N
Yichen Zhang *et.al* [3]	N	N	N	Y	N	N
Lei Liu *et.al* [4]	N	N	N	N	N	Y
Celimuge WU *et.al* [5]	Y	N	N	Y	Y	N
Abeel Akhtar *et.al* [6]	N	N	N	N	Y	N
Tomo Nikolovski *et.al* [7]	Y	Y	N	N	Y	N
Brij Bihari Dubey *et.al* [8]	N	N	N	N	N	N
Linfeng Liu *et.al* [9]	N	N	N	N	N	N
Rakesh Shrestha *et.al* [10]	N	Y	N	N	Y	N
Shuja Ansari *et.al* [11]	N	Y	N	N	N	N
P. Shane Crawford *et.al* [12]	Y	N	N	N	N	Y
Fuad A. Ghaleb *et.al* [13]	Y	N	N	N	N	N
Prabhjot Singh *et.al* [14]	Y	N	N	Y	Y	N
Craig Cooper *et.al* [15]	Y	Y	N	N	N	N

IV. CONCLISION

Wireless automobile communication is an important and effective technology for future smart transport systems, smart vehicles and smart infrastructure. The dawn of automobile grids opens up many applications that include vehicles with the capability to create wireless communications and manage networks, and help users drive more safely, more efficiently, and in a fun way. Because innovation relies too much on technical support, innovation must be heavily involved in distribution, and there are many interesting research issues that have not been addressed in many areas. Over the past decade, VANETs have made considerable progress in research and related technologies, and have attracted significant interest in several research communities such as transportation, wireless communications, and networking. In this paper we surveyed certain research paper based on Predictive Data Dissemination and their application in different fields of VANET. Particularly here we depicted summary of different Data Dissemination methods which have been developed. This paper describes the key features of vehicle systems, building information, legal regulations, protocols, applications, and future approaches. I expect the information provided here will help protocols and designers improve their services on this type of network and help drivers travel more safely.

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Authors Profile

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