

A Survey on Location Aided Routing Protocol For Vanet

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Abstract - Till now beside lots of work and improvement has done for safety and efficiency of road travel but still we are facing so many challenges which are need to overcome as road traffic is becoming more and more critical problems now these days In this paper we propose work using the concept of baseline, multicasting and minimization of distance from base line. In this scheme, we first decide a baseline which is a line between the source node and destination for discovering for route or for next broadcasting. Then neighbor node with shortest distance to the baseline is chosen as next broadcasting node. There so many protocols and models which try to efficiency of group communication. In this paper these protocols and models are studied.

Keywords - VANET, MANET, Routing Protocols, Topology-based, Position-based.

I. INTRODUCTION

Late new advances in remote innovations and implanted framework extended the utilization of correspondences to new spaces. A portable impromptu Network is progressively reconfigurable remote system that does not have an altered framework [1][2].VANET is extraordinarily sort of versatile specially appointed remote systems (MANETs) Vehicular systems are considered as a novel class of remote systems. VANET is an innovation that uses moving vehicles as hubs in a system to make a portable system. VANET transforms each partaking vehicle into a remote switch or hub, permitting vehicles around 100 to 300 meters of one another to interface and, thus, make a system with a wide range. As vehicles drop out of the sign range and drop out of the system, different vehicles can join in, interfacing vehicles to each other so that a versatile Internet is made It is one of the specially appointed systems genuine applications which empowers the correspondences among close-by vehicles and additionally in the middle of vehicles and close-by altered equipment's, typically depicted as roadside hardware's. Figure. 1 shows the VANET architecture

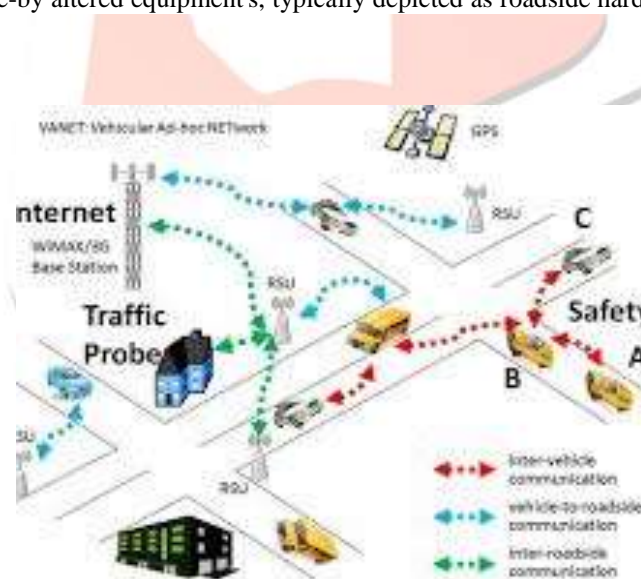


Fig.1: VANET Architecture

Characteristics of VANET

- Intelligent transportation systems (ITSs).
- Vehicle-to-roadside communication.
- High mobility that leads to extremely dynamic topology.
- Regular movement, restricted by both road topologies and traffic rules.
- Vehicles have sufficient power, computing and storage capacity.
- Vehicles are usually aware of their position and spatial environment.
- Routing-based communication's.
- Inter Vehicle communication.

Vehicular Network Applications

- Road safety applications oriented to the vehicle or to the driver
- Entertainment and commercial applications for passengers, making use of a plethora of cooperating technologies.
- Avoid or remove traffic congestion.

II. MULTICASTIN VANETS

The idea in VANET is that vehicles and roadside equipment should collect and distribute information in order to improve safety, get better traffic efficiency and even improve driving experience to driver and passengers. VANET can be used to exchange vehicle sensors information but also to transmit information between non adjacent vehicles in order to improve safety or to early inform of road congestion.

Multicasting is the transmission of information to a location that is shared by various hubs. Because of the attributes of VANETs, great wired multicasting conventions don't offer productive administration. There exist a lot of conventions proposed to think about VANET issues. Multicast in VANET's enhance the proficiency of Mobile system yet a few issues taking in thought multicast conventions for VANETs are characterized taking after classification [3][4]:

- Flooding
- Tree-based
- Mesh-based
- Overlay-based
- Backbone-based
- Stateless

Table 1 Multicast Approach comparison

	Efficiency	Robustness	Scalability	State Overhead
Flooding	1	5	1	1
Tree	5	1	3	4
Mesh	3	4	3	5
Overlay	3	3	4	3
Backbone	3	3	4	3
Stateless	4	3	2	1

Values: from 1 (lowest) to 5 (highest) These different multicast approaches use different types of protocols or stack of protocols depending upon the nature and their use.

Comparison Between Position Based and Topology Based

There are different classification frameworks that have been used to describe routing Protocols for VANET. Routing protocols can be broadly classified in two categories transmission -based and routing information based. Further divided in two sub categories active and proactive [5].

Table 2 Different types of Protocols

Transmission Strategies	Broadcast	Dav-Cast, DADCQ,DECA,POCA
	Multicast	Geo-cast
		Cluster
	Unicast	
Routing Information	Topology-based	Proactive
		Reactive
		Hybrid
	Position based	DTN
		Non-DTN
		Hybrid

Topology-Based Routing Protocol: It is traditional MANET routing protocol, which uses link information which is stored in the routing table as basis to forward packets from source to destination. Shortest route from source to destination, support of messages unicast, multicast and broad cast, less source consumption and beaconless these all characteristics saves the bandwidth. Where more overhead routes discover and maintaining delays fail to discover complete path (frequent path changes) and unnecessary flooding are its limitations. It can be only helpful in small network.

Position-Based Routing Protocol: It is also known as geographic routing protocols which is based on position rather than using network address where source sends the packets to the destination using its geographic condition rather than using network address. This protocol it is required that each node is able to decide its location and the location of its neighbors through

Geographic Position System (GPS). [6]. In this type we have no need to create and maintain global routes therefore it is more stable in high mobility environment. It has lowest overhead and more scalable whereas obstacles in highway scenario, deadlock problem in location server, failure of position services in tunnel are its drawbacks. So therefore this type is more suitable in VANETS.

III. DESCRIPTION OF MANHATTAN GRID MOBILITY MODEL

The Manhattan versatility model [8] mirrors the development examples of portable hubs on boulevards characterized by maps appeared in Fig.2. It is valuable in displaying development of hubs in a urban territory or city situations. This model takes after framework street topology. The guide is isolated into number of flat and vertical roads. Every road is isolated into two paths in every course. In vertical Street hubs move north and south course and flat roads hubs move in east and west heading. The event and vertical road makes a few crossing point focuses. The hubs can take turn from convergence point in left, right or go straight heading. The model works taking into account a probabilistic methodology for choice of hubs developments. The probability of moving in the same direction is 0.5 and the probability of turning left and right is 0.25. Vehicular nodes move according to direction shown.

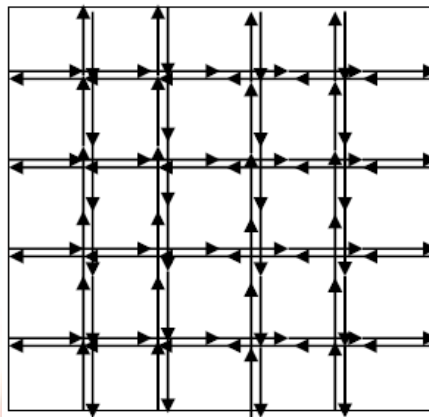


Fig.2: Manhattan model of 5x5 grid topology.

IV. CONCLUSION

In this paper we have examined different exploration papers on VANET and attempt to break down the execution of steering conventions which is better position based or topology based. We likewise learned about city situation with Manhattan model to bring the best execution.

Generally speaking, it can be reasoned that position based directing convention gives preferred execution over topology based steering conventions regarding bundle conveyance proportion, throughput, and end-to-end delay for both the vehicular activity situations. Subsequently we additionally presume that Location Aided Routing (LAR) enhances the proficiency

For exploration work, we need to concentrate on the correlation the effect of area supported directing, covetous area helped steering conventions for versatile impromptu systems with Manhattan model.

Future work will likewise incorporate the assessment of other position based directing conventions as they are more suitable in vehicular activity environment

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