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VANET based emergency traffic aware data delivery strategy

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Abstract — *Vehicular Ad Hoc Network (VANET) is an emerging class of wireless network that operates in a vehicular environment to provide communication between vehicles. VANET can be used by wide variety of applications to improve road safety, traffic efficiency and driving comfort. With the high dynamic nature of this network, communication linkage among vehicles in the environment suffers from link-breakage problem hence requires a reliable data delivery strategy to cope with this issue. In this work on data delivery strategy called Traffic-Aware Data Delivery (TADD). The idea is to use static nodes placed at each road junction to collect real-time traffic information to improve the situational awareness of the real road conditions. With these static nodes, vehicle as node in network and optimized best reliable node to transfer message. Achieve Better delivery rate, minimizing Average End to End Delay, reduce Network overhead*

Keywords- *VANETs, Urban environment, traffic, Routing, node selection*

I. INTRODUCTION

VANET stands for Vehicular Ad hoc Network is a special kind of ad hoc network in which nodes represent the vehicles and all the vehicles strictly follow the traffic rules. With the continuous increase in the number of vehicles on the road, congestion on the roads is also increasing day by day. When a vehicle is moving on road it is influenced by various factors like speed of vehicle, accidents on road side, traffic jams, unnoticed obstacles on road, giving passage to emergency vehicles etc. In this paper speed of the vehicle is considered as crucial factor in VANETs. The most essential goal of the VANET is not only to provide road safety to the users but also to provide comfort to the road users [1]. VANET is integrated with various other technologies like GPS, Bluetooth, Satellite, GPRS etc. to build up completely integrated Intelligent Transport System (ITS). Routing Protocols also play a very vital role in Intelligent Transport System. So in order to achieve fast, reliable communication in VANET routing protocols must be based upon the real time scenario.

The rest of the paper is organized as follows. Section II presents the related work. Section III illustrates the proposed model. In section IV implementation and displayed the results. Section V concludes the paper.

II. RELETED WORK

Xin Ming Zhang, *Member, Kai Heng Chen, Xu Lei Cao, and Dan Keun Sung, Fellow*[1] *proposed* a novel concept called the micro topology (MT), which consists of vehicles and wireless links among vehicles along a street as a basic component of routing paths and even the entire network topology. abstract the MT model reflecting the dynamic routing-related characteristics in practical urban scenarios along streets, including the effect of mobility of vehicles, signal fading, wireless channel contention and existing data traffic. We first analyze the endside-to-endside routing performance in an MT as a basis of routing decision.

Hiroki Hanawa and Hiroaki Higaki[2] Author proposed a GEDIR,Face, GPSR Routing protocol based on DTN Data Message Transmission by inter vehicle communication. We first calculate and estimate the impact factors related to transmission delay This paper proposes a novel data message transmission method by combination of inter-vehicular wireless communication and store-carry-forward in a vehicular wireless multihop transmission network in which a driving navigation system is mounted on each vehicle and the vehicular computers are sparsely distributed

Joanne Skiles , Imad Mahgoub[3] In this paper, author proposed introduce the GEOADV routing protocol. The GEOADV protocol is a hybrid geographic routing protocol in which paths are created reactively. GEOADV will address the lack of adaptable routing protocol in VANET environments.

Ohoud Alzamzami and Imad Mahgoub[4] In this paper[4], autor propose an enhanced directional greedy forwarding, DGF-ETX, that incorporates ETX into a multimetric routing function that considers distance, in addition to direction of candidate forwarders.

Omar sami Oubbati*, Abderrahmane Lakas,Nasreddine * and Mohamed Bachir Yagoubi*[5] author proposed UVAR (UAV-Assisted VANET Routing Protocol), a new routing technique for Vehicular Ad hoc Networks (VANets). This protocol is based on the use of the traffic density and the knowledge of vehicular connectivity in the streets

III. PROPOSED MODEL

VANET can be used for vehicular environment.eg. Safety related application. For that safety of passenger is a challenging issue in VANET. Delivering message to specific location is difficult due to the high mobility of vehicle so that use further technique to reduce network overhead and make efficient message delivery and avoid link-brakeage problem.

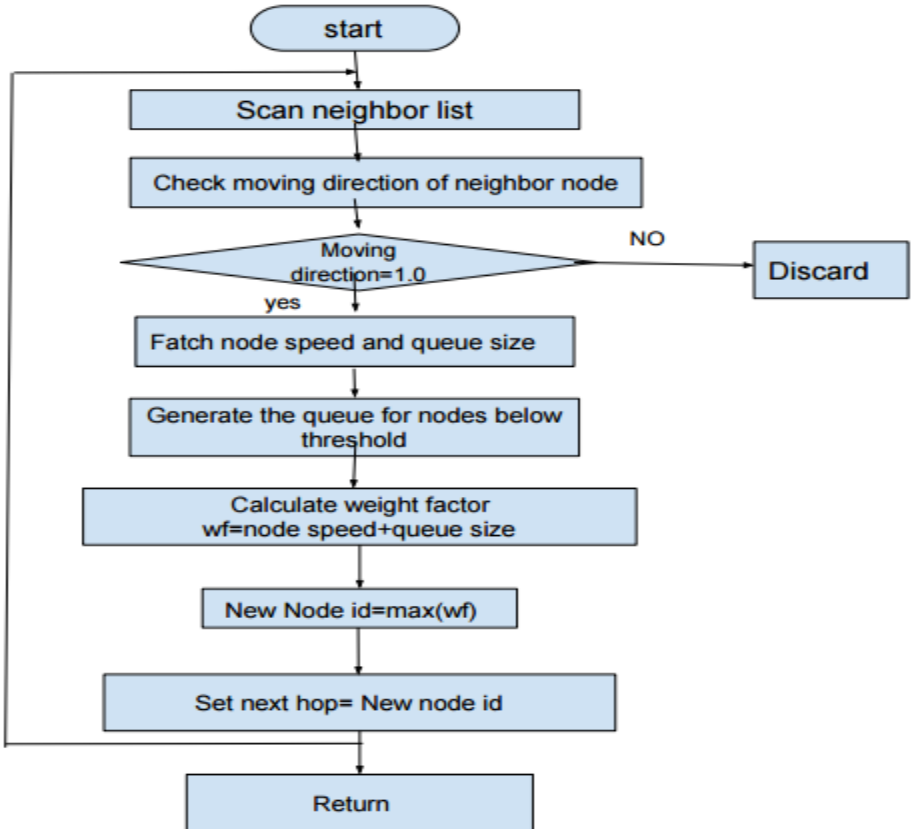

Figure:1 Proposed Workflow

IV. IMPLEMENTATION RESULTS

The proposed model is described above was implemented using ns-2. The core of NS-2 is also written in C++, but the C++ simulation objects are linked to shadow objects in OTcl and variables can be linked between both language realms. Simulation scripts are written in the OTcl language, an extension of the Tcl scripting language.

```
File  Edit  View  Search  Terminal  Help
ze0


WF[0] is 10.200000sendRequest dst is 2Velocity of 1, speed=18
at Time (8.281250),      Position of 1 is X: 2945.4700 Y: 19.9500       Queue si
ze0


WF[1] is 10.800000sendRequest dst is 3Velocity of 0, speed=17
at Time (8.297500),      Position of 0 is X: 81.7800 Y: 10.0500         Queue si
ze0


WF[0] is 10.200000sendRequest dst is 2Velocity of 1, speed=18
at Time (8.307500),      Position of 1 is X: 2945.4700 Y: 19.9500       Queue si
ze0


WF[1] is 10.800000sendRequest dst is 3Velocity of 0, speed=17
at Time (8.323750),      Position of 0 is X: 81.7800 Y: 10.0500         Queue si
ze0


WF[0] is 10.200000sendRequest dst is 2Velocity of 1, speed=18
```

Figure:2 Find weight factor of available neighbor node

CONCLUSION

Based on survey focus on improving timely delivery of message among the vehicle under dynamic environment for that designing process based next-hop search algorithm to reduce the delay, network overhead and improve the reliability of the data delivery.

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