

**A
Dissertation
On**

“Geocast Routing in Vehicular Ad-hoc Networks”

**Submitted in Partial fulfillment of the requirement
For the award of Degree of**

**MASTER OF TECHNOLOGY
Computer Technology and Application
Delhi Technological University, Delhi**

SUBMITTED BY

**ASHUTOSH KUMAR SINGH
University Roll No: 2K10/CTA/05**

Under the Guidance of:

Mr. MANOJ KUMAR

**Associate Professor
Delhi Technological University**



**DEPARTMENT OF COMPUTER ENGINEERING
DELHI TECHNOLOGICAL UNIVERSITY
2010-2013**

CERTIFICATE

This is to certify that the work contained in this dissertation entitled “**Geocast Routing in Vehicular Ad-hoc Networks**” submitted in the partial fulfillment, for the award for the degree of M. Tech. in Computer Technology and Applications at **DELHI TECHNOLOGICAL UNIVERSITY** by **ASHUTOSH KUMAR SINGH, Roll No. 2K10/CTA/05** is carried out by him under my supervision. This matter embodied in this project work has not been submitted earlier for the award of any degree or diploma in any university/institution to the best of our knowledge and belief.

(Mr. MANOJ KUMAR)
Project Guide
Associate Professor
Department of Computer Engineering
Delhi Technological University

ACKNOWLEDGEMENT

First of all, let me thank the almighty god, my parents and my dear friends who are the most graceful and merciful for their blessing that contributed to the successful completion of this project.

I feel privileged to offer my sincere thanks and deep sense of gratitude to **Mr. MANOJ KUMAR**, project guide for expressing his confidence in me by letting me work on a project of this magnitude and using the latest technologies and providing their support, help & encouragement in implementing this project.

I would like to take this opportunity to express the profound sense of gratitude and respect to all those who helped us throughout the duration of this project. **DELHI TECHNOLOGICAL UNIVERSITY**, in particular has been the source of inspiration, I acknowledge the effort of those who have contributed significantly to this project.

ASHUTOSH KUMAR SINGH
(Roll No: 2K10/CTA/05)

ABSTRACT

VANET is an emerging communication technology where it facilitates users and communication devices to have free mobility. It is a special case of MANET where it differs in high speed vehicle mobility and fast topology changes. Pertaining to services like safety-related warning, road traffic information plays a vital role for evolution of VANET. This contain several constraints related to network architecture, protocols for physical and link layer and mainly routing algorithms in network layer, respectively. Topology varies frequently with movements of vehicle. Caching of packets to be delivered becomes a major concern for VANET as devices are restricted to local storage capacity, dedicated processing power and other significant resources. Apart from the above stated issues validity of packet copies in cache is vulnerable to packet and path loss. For successful packet delivery we are proposing a novel geocast routing protocol named “Improved Caching using Full Transmission Range” or ICFTR which uses novel coverage determination to improve the caching methodology and eliminates network traffic and the packet losses due to high speed vehicle movements. The protocol enables full radio transmission range of the vehicle to forward the packets and improves the throughput of the system by eliminating range forwarding approach.