

# **GSM NETWORK BASED VEHICLE MOVEMENT MONITER FOR COMPANIES**

I .A .Thaminda Roshan Perera

"This dissertation is submitted in partial fulfillment of the requirement of the Degree of Master  
of science in Information Technology

Department of Mechanical Engineering,

University of Moratuwa

Sri Lanka

July 2006

91230

## **ABSTRACT**

There is an increasing demand for real-time tracking applications and systems locally as well as internationally. The satellite based Global Positioning System (GPS) is the ground technology for most of the commercial level systems. But high equipment cost, setup and the running cost incur deploying such GPS based tracking system, cause to discourage peoples' tracking interest. The project involves in developing a real-time vehicle movement monitoring system(vehicle movement monitor system) for companies to track their vehicles in the field. The proposed system comes as an unconventional cost-effective method for vehicle movement monitoring, using Global Systems for Mobile Communication (GSM) infrastructure and Location Based Services (LBS). This project involves in collecting the current position information (x, y coordinate) of tracking vehicles via location based service and plot them on a base map to pinpoint vehicle's ground location.

The main objective of this project is to deliver an alternative and cost-effective solution for the GPS based vehicle movement tracking, using minimal resources and available infrastructure. The system is intended to provide a reasonable accuracy in vehicle movement monitoring. This project will provide a complete solution to the intended customer organization to track and monitor their vehicles. The tracking application and geographical maps will be set up on a central server (Monitoring Station Machine) which runs under Windows platform. Each tracking vehicle must be equipped with a car unit (GSM/GPRS modem or generic mobile phone) which consist of a tracking enabled SIM. in order to be tacked by this system.

There are many potential applications for this type of system. Police department could take advantage of its tracking and digital message capabilities to improve officer safety or implement an automated ticketing system. Truck fleets, taxi companies, rental car firms, and government agencies could also benefit from customized versions of the vehicle movement monitoring system.