## Sir M. Visvesvaraya Institute of Technology

BANGALORE – 562157

**DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING**

### Certificate

Certified that the project work entitled “ **A** **Traffic Signal Preemption using GPS** ” is a bonafide work carried out by **Nikhil Mascarenhas (1MV09IS029), Pradeep G (1MV10IS404),** **Manish Agrawal (1MV09IS023),** and **Subash P (1MV09IS057)** in partial fulfillment for the award of Degree of Bachelor of Engineering in Information Science and Engineering of the Visvesvaraya Technological University, Belgaum during the year 2009-2010. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

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1)

2)

## DECLARATION

We hereby declare that the entire project work embodied in this dissertation has been carried out by us and no part has been submitted for any degree or diploma of any institution previously.

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**ABSTRACT**

An emergency vehicle traffic light preemption system for preemption of traffic lights at an intersection is to allow for the safe passage of emergency vehicles avoiding traffic. The project aims at developing a traffic signal preemption system using Global Positioning System or GPS. Traffic signal preemption is a type of system that allows the normal operation of [traffic lights](http://en.wikipedia.org/wiki/Traffic_light) to be [preempted](http://en.wikipedia.org/wiki/Preempt), often to assist [emergency vehicles](http://en.wikipedia.org/wiki/Emergency_vehicles). The most common use of these systems is to manipulate traffic signals in the path of an [emergency vehicle](http://en.wikipedia.org/wiki/Emergency_vehicle), stopping conflicting traffic and allowing the emergency vehicle right-of-way, to help reduce [response times](http://en.wikipedia.org/wiki/Response_time) and enhance traffic safety.

Global Positioning System (GPS) is a space-based [satellite navigation](http://en.wikipedia.org/wiki/Satellite_navigation) system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites. The project will use the GPS sensor inbuilt in an android smartphone to plot the location of an emergency vehicle. The traffic signals that lie in the path of the emergency vehicle are computed by a web server, and preemption commands are sent to the traffic signal controller. The traffic signal controller is implemented using an Arduino Microcontroller with an Ethernet Shield which enables the controller to connect to the web server via the Internet.

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**TABLE OF CONTENTS**

Certificate i

Declaration ii

Abstract iii

Acknowledgement iv

Table of Contents v

List of Figures and Tables vi

Chapter 1 Introduction

1.1 Problem Description 2

1.2 Motivation 3

1.3 Background 4

1.4 Research Objective 4

1.5 Research Tasks 7

1.6 Feasibility Study 7

Chapter 2 Literature Review/Related Work

2.1 Introduction 10

2.2 Current State of Practice 10

2.3 Benefits and Consequences 11

2.4 Current Techniques 14

2.5 Advancements 17

Chapter 3 System Requirement 3.1 Hardware Requirements 20

3.2. Software Requirements 20

Chapter 4 System Design

4.1 Network Configuration 22

4.2 Network Topology 28

Chapter 5 Simulation

5.1 Network Simulator 32

5.2 Working 34

5.3. Traffic Preemption Algorithm

Consideration 45

Chapter 6 Outcome Analysis

6.1 Starting Ns2 47

6.2 Running the Simulation 48

6.3 Results 48

6.4 Graphs 54

Conclusion………………………………………………………..59

Future Enhancements……………………………………………..60

Bibliography ……………………………………………………...62