GLOBAL POSITIONING SYSTEM (GPS):
THE UTILIZATION OF GPS IN
LEMBAGA PELESEHAN KENDERAAAN PERDAGANGAN (LPKP)

A dissertation submitted to the Graduate Department of Information Technology, College of Art
and Sciences in partial fulfillment of the requirement for the degree Master of Science
(Information Technology), MSc (IT), Universiti Utara Malaysia

By
Aisa Azira binti Abdul Aziz

Lecturer
Dr. Shafiz Affendi bin Mohd Yusof
KOLEJ SASTERA DAN SAINS  
(College of Arts and Sciences)  
Universiti Utara Malaysia

PERAKUAN KERJA KERTAS PROJEK  
(Certificate of Project Paper)

Saya, yang bertandatangan, memperakukan bahawa  
(I, the undersigned, certify that)

AISA AZIRA ABDUL AZIZ

calon untuk ijazah  
(candidate for the degree of)  
MSc. (IT)

telah mengemukakan kertas projek yang bertajuk  
(has presented his/her project paper of the following title)

GLOBAL POSITIONING SYSTEM (GPS); THE UTILIZATION OF GPS IN  
LEMBAGA PELESENAN KENDERAN PERDAGANGAN (LPKP)

seperti yang tercatat di muka surat tajuk dan kulit kertas projek  
(as it appears on the title page and front cover of project paper)

bahawa kertas projek tersebut boleh diterima dari segi bentuk serta kandungan  
dan meliputi bidang ilmu dengan memuaskan.  
(that the project paper acceptable in form and content, and that a satisfactory  
knowledge of the field is covered by the project paper).

Nama Penyelia Utama  
(Name of Main Supervisor):  
DR. SHAHIZ AFFENDI MOHD YUSOFF

Tanda tangan  
(Signature):  
[Signature]

Tarikh  
(Date):  
5 Jun 2008
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>PERMISSION TO USE</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>i</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENT</td>
<td>ii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>iii</td>
</tr>
</tbody>
</table>

## CHAPTER ONE: INTRODUCTION

1.0 Background
1.1 Problem Statement
1.2 Project Objective
1.3 Scope and Limitation
1.4 Methodology

## CHAPTER TWO: LITERATURE REVIEW

2.0 Background
   2.0.1 GPS Functionality
2.1 Global Positioning System (GPS)
2.2 GPS Utilization
   2.2.1 GPS in Construction
   2.2.2 GPS in Police
   2.2.3 GPS in Land and Sea Navigation
   2.2.4 GPS in Agriculture
   2.2.5 GPS in Public Safety and Disaster Relief
   2.2.6 GPS in Transportation
   2.2.7 GPS Utilization Success

## CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Background
3.1 Survey Design
3.2 Sampling
   3.2.1 Convenience Sampling
   3.2.2 Simple Random Sampling
3.3 Data Gathering
3.4 Data Analysis

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>19</td>
</tr>
</tbody>
</table>
CHAPTER FOUR: FINDING

4.0 Background
4.1 Analysis
   Section A – Demographic
   Section B (Part I) – GPS’s Awareness
   Section B (Part II) – GPS’s Implementation
   Section B (Part III) – Preparedness Towards GPS
   Section C – Issues That Will Arise
   Section D – GPS Compliance

CHAPTER FIVE: CONCLUSION

5.0 Discussion
   5.0.1 The Benefit and Prospects of GPS
   5.0.2 The Detriment of GPS
   5.0.3 Issues and Disputes
5.1 Significance of The Study
5.2 Conclusion
5.3 Recommendations
5.4 Future Research

REFERENCES

Appendix 1
Permission to Use

In presenting this project in partial of the requirement for a post graduate degree from the Universiti Utara Malaysia, I agree that the libraries of this university may make it available for inspection. I further agree that permission for copying of this project in any manner, in whole or in part, for scholarly purposes may be granted by the supervisor(s) or, in their absence, by the Dean of Graduate Department of Information Technology. It is understood that any copying or publication or use of this project or parts thereof, for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia in any scholarly use which may be of any material in my project.

Request for permission to copy or to make other use of material in this project in whole or in part should be addressed to

Dean of Graduate Department of Information Technology
College of Art and Sciences
Universiti Utara Malaysia
06010 Sintok
Kedah Darul Aman
ABSTRACT

This research is a feasibility study on the utilization of Global Positioning System (GPS) in Lembaga Pelesenan Kenderaan Perdagangan (LPKP). GPS is a widely use technology in various sectors such as military, civilian and others, however in this research the focus would be on the transportation vehicles that are being registered with LPKP. The GPS will not only be used for tracking and controlling but it will be used to locate the location of the vehicle and capable in recording the handling errors of the drivers. The objective of this research is to find out any issues that will arise from the future utilization of the technology, focusing on the transportation’s operators, or else later being address as entrepreneur. Thus, it could be used as feedback for the LPKP to take into consideration of the issues, soon.
ACKNOWLEDGEMENT

First and foremost, thanks to Allah S.W.T for giving me the strength to work on this paper. I would like to thank my advisor, Dr. Shafiz Affendi bin Mohd Yusof for his invaluable assistance and guidance to ensure the success of this paper. Special thanks to Northern LPKP staffs and officers for allowing me to collect data from their department as well as to all my friends and my family for their constructive comments and support.
<table>
<thead>
<tr>
<th>Table 1:</th>
<th>The LPKP Licenses Versus The State/ Country</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2:</td>
<td>Section A – Demographic (Age)</td>
<td>21</td>
</tr>
<tr>
<td>Table 3:</td>
<td>Section A – Demographic (Gender and Race)</td>
<td>21</td>
</tr>
<tr>
<td>Table 4:</td>
<td>Section A – Demographic (Qualification)</td>
<td>22</td>
</tr>
<tr>
<td>Table 5:</td>
<td>Section A – Demographic (Registration Status and Types of Services)</td>
<td>22</td>
</tr>
<tr>
<td>Table 6:</td>
<td>Section B (Part I) – GPS versus Country</td>
<td>23</td>
</tr>
<tr>
<td>Table 7:</td>
<td>Section B (Part I) – Service versus Opinion</td>
<td>24</td>
</tr>
<tr>
<td>Table 8:</td>
<td>Section B (Part I) – GPS in Daily Operationals</td>
<td>24</td>
</tr>
<tr>
<td>Table 9:</td>
<td>Section B (Part II) – GPS’s Location</td>
<td>25</td>
</tr>
<tr>
<td>Table 10:</td>
<td>Section B (Part II) – GPS’s Cost</td>
<td>25</td>
</tr>
<tr>
<td>Table 11:</td>
<td>Section B (Part II) – GPS’s Advantages</td>
<td>25</td>
</tr>
<tr>
<td>Table 12:</td>
<td>Section B (Part II) – GPS’s Disadvantages</td>
<td>26</td>
</tr>
<tr>
<td>Table 13:</td>
<td>Section B (Part II) – GPS’s Implementation</td>
<td>26</td>
</tr>
<tr>
<td>Table 14:</td>
<td>Section B (Part II) – GPS’s Replace</td>
<td>26</td>
</tr>
<tr>
<td>Table 15:</td>
<td>Section B (Part III) – Preparedness Towards GPS</td>
<td>27</td>
</tr>
<tr>
<td>Table 16:</td>
<td>Section B (Part III) – Implementation Status</td>
<td>27</td>
</tr>
<tr>
<td>Table 17:</td>
<td>Section B (Part III) – Needs of Implementation</td>
<td>27</td>
</tr>
<tr>
<td>Table 18:</td>
<td>Section C – Issues That Will Arise</td>
<td>28</td>
</tr>
<tr>
<td>Table 19:</td>
<td>Section D – GPS Compliance</td>
<td>28</td>
</tr>
<tr>
<td>Table 20:</td>
<td>Section D – GPS Comments</td>
<td>29</td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION

1.0 Background

Lembaga Pelesenan Kendaraan Perdagangan (LPKP) is a government body under the administration of the Ministry of Entrepreneur and Cooperative Development (MECD). The core task of LPKP is to produce and governance goods transportation licenses as well as public transportation licenses. In Malaysia, the distribution of the portfolio is divided accordingly to geographical areas which are Peninsular LPKP, Sabah LPKP and Sarawak LPKP. In this research the focus area of implementation is in Peninsular LPKP which then being narrowed down to Northern Regional LPKP that is located in Sungai Petani, Kedah.

In order to understand more about LPKP, it would be better to clarify that LPKP licenses and Jabatan Pengangkutan Jalan (JPJ) licenses are different in terms of its principle. JPJ licenses are licenses that authorize the vehicles to be on the road where as LPKP licenses are licenses that authorize goods that will be carried out using the vehicles, where it can be goods or people (especially for services). Both LPKP and JPJ are working together to ensure the goods and services transportation operate in a good condition abide by some rules following the act from JPJ and LPKP.

Currently LPKP is only responsible on the buses, trucks or taxies that are registered with LPKP. Therefore, the safety and condition of the vehicle and public that used them has become the responsibilities of LPKP as well. The chairman of LPKP, Datuk Haji Markiman bin Kobiran has come out with a thought of compulsories GPS on tracking and controlling vehicle which will reduce accidents and errors of vehicle, and also road handling among drivers. It is hoped that these matters will ensure public safety (Singh, 2005) while using the public transportation.

Based on the news reported by (Bernama, 2007), Datuk Haji Markiman bin Kobiran said the proposal to make it compulsory for express buses to be installed with the GPS device was still being studied and the LPKP hoped to implement it as soon as possible. He also added that drivers exceeding the speed limit, driving dangerously, applying the emergency brakes or not following the travel schedule could be detected by the bus companies’ officers via the hand phone and recorded. With the help of GPS, it is for detecting the misconduct of bus drivers in an effort to reduce accidents involving public transport vehicles.

Besides that, as described by (Ahmad et.al., 1998) where the advanced of information technologies have brought the government to new number of information system in Malaysia, which include in the transportation sectors. Since the
rapid economic growth in Malaysia, the number of new vehicles on the road, new roads, and highways are expected to increase (Umar, 1994), thus with the use of GPS on tracking and controlling will help to reduce the number of casualties among public transportations.

Managing the licenses in Malaysia solely would be very complicated. Therefore LPKP have organized the regional by distributing the state regionally. With the purpose of managing licenses in Peninsular Malaysia, four regional offices have been operating which are Northern Regional LPKP, Middle Regional LPKP, Eastern Regional LPKP and Western Regional LPKP. Retrieving data from the LPKP, it is reported that by 2007 the licenses that being produced by LPKP in Malaysia are 500,368 licenses. Referring to the data, there are some countries such as Brunei, Indonesia, Singapore and Thailand that owned the licenses. This situation happens because the vehicles that are registered are operating in those countries due to providing services or undergoing projects. The details of the distribution of the licenses are:
The contents of the thesis is for internal user only
REFERENCES


