

**A Framework for Automatic Lecturer's Attendance System  
Using Automated Vehicle Identification (AVI) technology**

**A Thesis submitted to Faculty of Information Technology in partial  
fulfillment of the requirements for the degree Master of Science  
(Information and Communication Technology),  
University Utara Malaysia**

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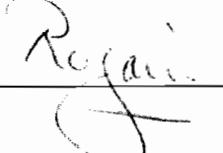
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## ABSTRACT

Automatic Vehicle Identification (AVI) technology can be used to significantly improve the efficiency of lecturer's attendance system by providing the capability of automatic identification and data capture. This technology poses many new challenges on current data management systems. AVI data are time-dependent, dynamically changing, in large volumes, and carry implicit semantics. Radio frequency identification (RFID) data management systems need to effectively support such large scale temporal data created by RFID applications. These systems need to have an explicit temporal data model for RFID data to support tracking and monitoring attendance. In addition, the university needs to have an automatic method to transport data from AVI reader to database. This research proposed a framework for Automatic lecturer's Attendance system using AVI technology. A prototype has been developed to test the framework.

## ***TABLE OF CONTENTS***

### **CHAPTER ONE: INTRODUCTION**

1.1 Introduction .....	1
1.2 Problem Statement.....	3
1.3 Research Objectives.....	3
1.4 Scope.....	4
1.5 Significant.....	4
1.6 Summary.....	4

### **CHAPTER TWO: LITERATURE REVIEW**

2.1 Technology Background .....	6
2.2 RFID Trackin.....	7
2.3 RFID Reader and Tag.....	9
2.4 Advantages of RFID.....	10
2.5 Automated Vehicle Identification (AVI).....	11
2.6 Attendance.....	15
2.7 Summary.....	17

### **CHAPTER THREE: RESEARCH METHODOLOGY**

3.1 Introduction.....	18
3.2 Awareness of Problem .....	19
3.3 Suggestion.....	20
3.4 Framework Design.....	20
3.5 Framework Testing .....	21
3.6 Summary.....	21

## **CHAPTER FOUR: REQUIREMENTS ANALYSIS**

4.1 Introduction.....	22
4.2 Use Case Diagram .....	22
4.3 Activity Diagram .....	25
4.4 Sequence diagram .....	27
4.5 Collaboration Diagram.....	30
4.5 Class Diagram.....	33
4.6 Summary.....	34

## **CHAPTER FIVE: AVI FRAMEWORK DESIGN**

5.1 Designing a framework of AVI.....	35
5.1.1 Description.....	36
5.2 Data Flow pathways .....	37
5.3 Summary.....	38

## **CHAPTER SIX: PROTOTYPE DEVELOPMENT**

6.1 Introduction.....	39
6.2 Restriction of the prototype.....	39
6.3 Description.....	40
6.4 Summary.....	46

## **CHAPTER SEVEN: DISCUSSION AND CONCLUSION**

7.1 Discussion .....	47
7.2 Limitations .....	48
7.3 Recommendations and Future work .....	48
7.4 Conclusion .....	49

REFERENCES .....	50
APPENDIXE A.....	55
APPENDIXE B.....	64

## LIST OF FIGURES

Figure 3.1	General Methodology of Design Reasoning.....	19
Figure 4.1	Use Case Diagram for lecturer' attendance system.....	24
Figure 4.2	Activity Diagram for lecturer' attendance system.....	26
Figure 4.3	Sequence Diagram (Reader).....	27
Figure 4.4	Sequence Diagram (Database).....	28
Figure 4.5	Sequence Diagram (Admin).....	28
Figure 4.6	Sequence Diagram (lecturer).....	29
Figure 4.7	Sequence Diagram (login).....	30
Figure 4.8	Collaboration Diagram Reader.....	31
Figure 4.9	Collaboration Diagram Database.....	31
Figure 4.10	Collaboration Diagram Admin.....	32
Figure 4.11	Collaboration Diagram Lecturers.....	32
Figure 4.12	Collaboration Diagram Login.....	33
Figure 4.13	Class Diagram.....	34
Figure 5.1	AVI Framework.....	36
Figure 5.2	Data Flow of the Process.....	37
Figure 6.1	AVI reader.....	40
Figure 6.2	Add new lecturers.....	41
Figure 6.3	New lecturers stored in lecturer info.....	41
Figure 6.4	Show information.....	42
Figure 6.5	Hours spent inside campus.....	42
Figure 6.6	Hours spent outside campus.....	43
Figure 6.7	Lecturer status.....	44
Figure 6.8	Lecturers Status.....	44
Figure 6.9	Attendance record.....	45

## LIST OF ABBREVIATIONS

<b>AVI</b>	Automated Vehicle Identification
<b>RFID</b>	Radio Frequency Identification
<b>AVL</b>	Automatic Vehicle Identification
<b>AVO</b>	Automatic Vehicle Operation
<b>IVHS</b>	Automatic Vehicle Highway system
<b>UML</b>	Unified Modeling Language

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

The era of standard situated PCs is over; nowadays more own multiple different computing appliances that can be easily transported (Bertini & Santucci, 2004). People prefer to use the combination of mobile devices and information systems as mechanism to provide automated data capture. Automated data capture has important significant in information systems in various fields. It has gained great attention and being gradually adopted and deployed in wide area applications includes supply chain management, retailing, anti-counterfeiting, security and healthcare (Wang & Liu, 2005).

The current technology for automated data capture is by utilizing the radio frequency identification (RFID). RFID uses radio frequency waves to transfer data between readers and mobile tagged object. This technology works automatically and very fast. It also does not require line of sight or contact between readers and tagged objects (Wang & Liu, 2005). According to Wigan (1994), RFID has been used widely as Intelligent Vehicle Highway System (IVHS). The family includes in this technology are driver communications, automatic vehicle location (AVL), automatic vehicle

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