

**EMPLOYEE MONITORING AND TRACKING SYSTEM (EMTS)  
USING RFID**

**ADIB BIN LAM AHMAD**

**FACULTY OF ELECTRICAL ENGINEERING  
UNIVERSITI TEKNOLOGI MARA  
MALAYSIA**

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## **ABSTRACT**

The main objective of this project is to develop an Employee Monitoring and Tracking System (EMTS) by using Radio Frequency Identification (RFID) as tracking device. The proposed project is mainly focused on software implementation and used ready built hardware system. It consists of the RFID tags, RFID reader and monitoring Host computer (PC). In the PC, Graphical User Interface (GUI) of this EMTS is developed using Microsoft Visual Basic 2008 Express Edition. In this system, personal details of employees will be stored in database where it can be retrieved only by the unique RFID tag identification (ID). The database is developed using Microsoft Access 2007 and Microsoft SQL Server database. All the information in this database can be monitored by the employer. The RFID readers have been installed at certain places in the workplace. As tracking system, this system is capable to automatically update the employee last scan time at the respective RFID reader, date and location at the workplace. This system provides easier monitoring and tracking system as well as efficient data management. This proposed system is suitable to be implemented in bigger size offices or factories.

## TABLE OF CONTENTS

| CHAPTER | TITLE                             | PAGE |
|---------|-----------------------------------|------|
|         | DECLARATION                       | iii  |
|         | DEDICATION                        | iv   |
|         | ACKNOWLEDGMENT                    | v    |
|         | ABSTRACT                          | vi   |
|         | TABLE OF CONTENTS                 | vii  |
|         | LIST OF FIGURES                   | x    |
|         | LIST OF TABLE                     | xi   |
|         | LIST OF SYMBOLS AND ABBREVIATIONS | xii  |
| 1       | INTRODUCTION                      | 1    |
|         | 1.1 Background of Study           | 1    |
|         | 1.2 Problem Statement             | 3    |
|         | 1.3 Objectives                    | 3    |
|         | 1.4 Scope of Work                 | 4    |
|         | 1.5 Thesis Organization           | 4    |

# CHAPTER 1

## INTRODUCTION

### 1.1 BACKGROUND OF STUDY

Radio Frequency Identification (RFID) is an automatic identification technology which has an ability to perform wireless communication and without the necessity for line-of-sight [1]. RFID technology is not something new to the world. It has been around for some time, but now it is being explored in new ways. RFID tags keep track of things using tiny electronic circuits that can be “read” by a special receiver [2].

This RFID system is mainly consists of reader (transceiver) and tag (transponder). The main function of a transceiver is to read and/or write data to RFID tags. Antenna could be built inside the reader. The antenna is the channel between the tag and the transceiver, which control the systems data access and communication [3]. Meanwhile, the transponder is a device that transmits data to reader which is located on the object to be identified [3]. These components communicate via radio signals that carry data either unidirectional or bi-directionally. Figure 1 shows the basic operation of RFID system. As shown in Figure 1, the tag enters Radio Frequency (RF) field of the reader. The tag gains power from the signal transmitted by the reader. Then, the tag will transmit ID to reader where it will capture the data and send the data to the computer.