**MINISTRY OF EDUCATION AND TRAINING**

**FPT UNIVERSITY**

Capstone Project Document

**Implementation of Surveillance Camera using Raspberry kit**

|  |  |
| --- | --- |
| **Group 05** | |
| **Group members** | Đặng Ái Trinh - Trinhdase60944  Nguyễn Chí Nghĩa – Nghiancse61203  Lê Long Hồ - Hollse61291  Nguyễn Hồng lâm – Lamnhse60867 |
| **Supervisor** | Mr. Bùi Đại Trí |
| **Ext. Supervisor** | N/A |
| **Capstone Project code** | SCWR |

-Ho Chi Minh City, **10/05/2016**-

*This page is intentionally left blank*

# Table of Contents

[Table of Contents 3](#_Toc218532810)

[A. Report No. 1 Introduction 4](#_Toc218532811)

[1. Project Information 4](#_Toc218532812)

[2. Introduction 4](#_Toc218532813)

[3. Current Situation 4](#_Toc218532814)

[4. Problem Definition 5](#_Toc218532815)

[5. Proposed Solution 6](#_Toc218532816)

[5.1 Feature functions 6](#_Toc218532817)

[5.2 Advantages and disadvantages 6](#_Toc218532818)

[6. Functional Requirements 7](#_Toc218532819)

[7. Role and Responsibility 8](#_Toc218532820)

**Definitions, Acronyms, and Abbreviations**

|  |  |
| --- | --- |
| **Name** | **Definition** |
| SCWR | Implementation of Surveillance Camera using  Raspberry kit |
| CCTV | Closed circuit television camera |
| SMS | Short message service |

# Report No. 1 Introduction

## Project Information

* Project name: **Implementation of Surveillance Camera using Raspberry kit**
* Project Code: **SCWR**
* Product Type: **Device**
* Start Date: **10/05/2016**
* End Date: **01/08/2016**

## Introduction

Everyone likes to ensure that their home is secured and that everything and everyone is safe while they are out. In the past years, that meant using CCTV systems to record, but few of them had remote access or alert. Nowadays, most home surveillance camera systems allow you to monitor what is going on in your home with live or recorded videos. Some have alarms or can send you notifications when they detect activity, some make alert sound, etc. Based on our research and analysis, we have built project deals with the Design and Implementation of Surveillance Camera using Raspberry kit.

Our system, SCWR provides a greater benefit to user. The system is connected to internet to provide remote monitoring functions for users. We build this system, which help users know what is happening, even when you are away. Messages are sent directly to your mobile device whenever cameras detect motion and transmits, also intruder images will be uploaded via WiFi to a static IP, which is viewed using a web browser, even from mobile device. Besides, our system also makes alert sound at home.

This document describes our working process in 4 months includes our perspective in the system, component designs and detailed core workflows. We developed a good solution that provides a user security application for homes.

## Current Situation

Today, Security cameras are the ones that are popular because of their usefulness and ability to do all the work for you and save you from harm.

On the market, there are various surveillance systems such as camera, CCTV etc. With these types of surveillance systems, a stationary person who stays in a particular area can only view what is happening ai another place in a certain period of time. But it becomes inconvenient if the user is moving from one place to another.

SCWR makes it simpler than ever to keep an eye on home. When something moves inside the monitored area, the system has ability to detect that moving object and estimate their size in front of view of camera. Estimation of object size helps to exclude the wrong thieves (such as mouses and cats). The proposed security system captures object image, makes an alert sound, sends an alarm message to users and transmits intruder images via WiFi to a static IP, which can be viewed using a web browser, even from your mobile.

## Problem Definition

On the other hand, the number of weeknesses may affect to the effectiveness of CCTV system in some cases, such as:

* Users confront with many problems searching for necessary information.
* They have to store a huge amount of data.
* System can record a robbery or crime in progress, but they can't do anything to actually stop the crime.

## Proposed Solution

Our proposed solution is to build a Surveillance Camera system named “SCWR” based on Raspberry kit which increases the security and convenience. The system can overcome the weeknesses of available CCTV systems and give users more utitlities and convenience.

### **Feature functions**

This system distinguishes person from thing such as a mouse or a cat, and send warning SMS/MMS to user’s phone. The system is connected to internet to provide the remote monitoring functions for users.

### Advantages and disadvantages

The advantages and disadvantages of the proposed solution:

5.2.1 Advantages:

- Quick and simple setup.

- Capture images of any person moving in the monitored area and transmits intruder images.

- Know what’s going on, even when you’re away, with emails sent directly to your mobile device when your camera detects motion.

- The system has alarm feature.

5.2.2. Disadvantages:

- Sometimes this system does not work right.

## Functional Requirements

Function requirements of the system are listed as below:

* The system has ability to detect a moving object and estimate their size in front of view of camera.
* Estimation of object size help to exclude the wrong thief detection (such as mouse, cat.).
* Transmits intruder images

## Role and Responsibility

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Full Name | Role | Position | Contact |
| 1 | Bùi Đại Trí | Project Manager | Supervisor | Daitribk@gmail.com |
| 2 | Đặng Ái Trinh | Developer, Tester | Leader | Trinhdase60944@fpt.edu.vn |
| 3 | Nguyễn Chí Nghĩa | Developer, Tester | Member | [Nghiancse61203@fpt.edu.vn](mailto:phucnhse60749@fpt.edu.vn) |
| 4 | Lê Long Hồ | Developer, Tester | Member | Hollse61291@fpt.edu.vn |
| 5 | Nguyễn Hồng lâm | Developer, Tester | Member | Lamnhse60867@fpt.edu.vn |

Table : Roles and Responsibilities