**MINISTRY OF EDUCATION AND TRAINING**

**FPT UNIVERSITY**

Capstone Project Document

**Vietnamese Sign Language Recognition**

|  |  |
| --- | --- |
| **Group 05** | |
| **Group members** | Nguyễn Hữu Kỳ Long – Team leader – SE60984  Nguyễn Đình Tân – Team member – SE61115  Nguyễn Xuân Ý – Team member – SE60869  Lê Phương Bình – Team member – SE61049 |
| **Supervisor** | Mr. Đỗ Đức Minh Quân |
| **Ext. Supervisor** | N/A |
| **Capstone Project code** | VSLR |

-Ho Chi Minh City, 17/05/2015-

*This page is intentionally left blank*

# Table of Contents

[Table of Contents 3](#_Toc419668198)

[Definitions, Acronyms, and Abbreviations 4](#_Toc419668199)

[A. Report No. 1 Introduction 5](#_Toc419668200)

[1. Project Information 5](#_Toc419668201)

[2. Introduction 5](#_Toc419668202)

[3. Current Situation 5](#_Toc419668203)

[4. Problem Definition 5](#_Toc419668204)

[5. Proposed Solution 5](#_Toc419668205)

[5.1 Feature functions 5](#_Toc419668206)

[5.2 Advantages and disadvantages 6](#_Toc419668207)

[6. Functional Requirements 6](#_Toc419668208)

[6.1 Manage the database 6](#_Toc419668209)

[6.2 Manage the camera communicating with the board 6](#_Toc419668210)

[6.3 Make content 6](#_Toc419668211)

[6.4 Manage the GUI 6](#_Toc419668212)

[7. Role and Responsibility 6](#_Toc419668213)

# Definitions, Acronyms, and Abbreviations

|  |  |
| --- | --- |
| **Name** | **Definition** |
|  |  |
|  |  |
|  |  |
|  |  |

# Report No. 1 Introduction

## Project Information

* Project name: **Vietnamese Sign Language Recognition**
* Project Code: **VSLR**
* Product Type: **Embedded system**
* Start Date: **May 11th, 2015**
* End Date:

## Introduction

Nowadays, the communication is the way people can understand each other, is the way people can express their ideas, their thoughts. As we know, the speak language is the common way to communicate in life. However, to dumb person, they still need to communicate to others so they have a different way to expose themselves, it is called hand sign language.

In this project, we want to develop a device that can help dumb person communicate to not only another mute but also everyone. The device can capture hand signs and then translate them into text or sound with the same meaning.

## Current Situation

When you want to talk to a dumb person or when a mute want to present his / her ideas, presentations in a meeting but you are not able to get their signs. Furthermore, when two dumb person talk with each other but they are from different countries, they have distinct hand sign language, which way can they understand each other? Obviously, there are some ways, they can write out what they want or they can use some signs that are familiar to the daily life.

## Problem Definition

The following disadvantages of current situation:

- Handwritten: Time consuming to write out all content is very high.

- Using familiar signs: Without time consuming, the accuracy about the content is not high.

## Proposed Solution

To meet the needs of users we offer a solution based on translating hand signs into content and then show them.

Our system is a small device with a camera to capture hand signs and then translate them.

In more detail, our system has the following functions:

### **Feature functions**

* User can add new sign to the system.
* The system detect your hands, keep track them and then analyze the captured images into content.
* Show the content for users.

### Advantages and disadvantages

The advantages and disadvantages of the proposed solution:

* Advantages:
  + The system enables the user can add his / her signs.
* Disadvantages:
  + Users must

## Functional Requirements

Function requirements of the system are listed as below:

### Manage the database

* Add or remove the new data to database.
* Analyze the new data before adding to database.
* Training SVM.

### Manage the camera communicating with the board

* Capturing, tracking the data from camera.

### Make content

* Analyze the images which is captured and then translate them into content.

### Manage the GUI

* The way users interact with the system.

## Role and Responsibility

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Full Name | Role | Position | Contact |
| 1 | Đỗ Đức Minh Quân | Scrum Master/Product Owner | Instructor | [m](mailto:Khanhkt@fpt.edu.vn)inhquandd@fpt.edu.vn |
| 2 | Nguyễn Hữu Kỳ Long | Developer | Leader | [longnhkse60984@fpt.edu.vn](mailto:longnhkse60984@fpt.edu.vn) |
| 3 | Nguyễn Đình Tân | Developer | Member | [tanndse61115@fpt.edu.vn](mailto:tanndse61115@fpt.edu.vn) |
| 4 | Nguyễn Xuân Ý | Developer | Member | [ynxse60896@fpt.edu.vn](mailto:ynxse60896@fpt.edu.vn) |
| 5 | Lê Phương Bình | Developer | Member | [binhlpse61049@fpt.edu.vn](mailto:binhlpse61049@fpt.edu.vn) |

*Table 1: Roles and Responsibilities*