Status Report

Indoor drone

Prepared by: Group 9

Supervisor: Cao Xuan Nam

Date: 02/21/2020

Version: 1.0

# Executive Summary:

The Status Report is to summarizes the current status of our project. This will show the analysis and description about the project timeline, where we are and what we have achieved so far. It also provides a summary of the work contributed by each team member, which includes working hours and learning or working task from first half of R&D project. Furthermore, in this report we will list out the issues that our team has encountered while doing the project and solutions as well.

The entire project will cost no more than 1000$ with everything take into account from drone component to software license, we will continue to research for more optimal ways to reduce the cost as much as possible.

# About the Project:

The goal of this project is to build a drone can navigate indoors and travel to defined route by receiving command from ground control station (e.g. PC or mobile device), which is based on an existing drone platform. In addition, the drone should be stable while flying and have some capability to react with obstacles itself.

# Project’s scope and objectives:

## Scopes

* Completely build a drone with basic auto commands.
* Allowing to control drone from distance while communicating with a PC through wireless signal.
* Implement auto detection obstacles with camera and OpenCV library.
* Optimizing drone

## Objectives

* List and purchase the necessary parts of the drone
* Make an architecture plan and build the drone based on it
* Implement connection between the drone and the ground control station using WIFI module.
* Implement basic instructions (take off, landing, etc.) and control the drone without using controller.
* Implement non-GPS navigation.
* Implement auto detect obstacles technology using OpenCV by capturing images.

## Project deliverables

* A complete functional drone
* Project documents
* Modular development and architect plans of the project
* Drone prototype for demonstration purposes
* Test-cases performed on the drone

## Project Milestones

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Milestones | Start date (Months) | End date (Months) |
| 1 | Project Proposal | 24 October, 2019 | 24 October, 2019 |
| 2 | Complete building a drone based on DIY guide | October, 2019 | December, 2019 |
| 3 | Q&R Review Presentation | 16 Jan, 2020 | 10 Jan, 2020 |
| 4 | Controlling drone using client-server system | January, 2020 | February, 2020 |
| 5 | Upgrade drone to follow a defined route | February, 2020 | March - April, 2020 |
| 6 | Mid-review Presentation | 12 March, 2020 | 12 March, 2020 |
| 7 | Optimizing drone (Optional) | April, 2020 | May, 2020 |
| 8 | Final Presentation | 01 June, 2020 | 01 June, 2020 |

# Project status

Currently our team tatic has been changed. We has separate into two small group to handle the drone project. One is working on the hardware such as configuring port, setting up WIFI connection, motors, esc, etc. Another group is handling the software, which is setting up the ground control station on PC and connection between the drone and PC. According to the current status, these are the work that has been done so far:

* We completed building a drone and manually control it through radio signal and controller
* We have tested the drone behaviors and documented it
* We have researched a way to control drone without using controller