

March 27, 2017

Dr. Jason Rhinelander

Reiland Systems Ltd.

Saint Mary’s University

Halifax, Nova Scotia

B3H 3C3

Dear Dr. Rhinelander,

Attached is Group 2’s senior design interim report titled “Programmable Flight Controller”, written in fulfillment of the requirements of the Faculty of Engineering ECED 4901 Senior Design course. The report outlines the specifics of each portion of the project encounters throughout the 2016/2017 academic year.

The intention of this project is to develop a completely programmable flight controller for use on a quadrotor drone. The controller and sensors will be implemented using an Arduino Uno Microcontroller and Raspberry Pi 3 microprocessor. A graphical user interface was also developed to display information about the controller and sensors. The sections enclosed in the attached report discusses the simulation, implementation and testing of the controller as well as the design and testing of the graphical user interface. In addition, this report outlines the management side of the project including the Gantt Chart showing the timelines, task division and each individual group members responsibilities. The report concludes with sections highlighting some of the challenges that were encountered over the course of the project including a new legislation regarding recreational drone usage introduced by the federal government in March of 2017 which severly disrupted our planned flight testing following this section will be recommended future improvements.

Please contact the group’s nominated project manager, Dylan Humber, at dylan.humber@gmail.com should you have any questions about the report.

Sincerely,

Lucas Doucette, Dylan Humber and Brendon Camm

Department of Electrical and Computer Engineering

Dalhousie University

P.O. Box 1000

Halifax, Nova Scotia

B3J 1B6