

Group: May 1738

Project: Flying flashlight

Advisor: Professor Gary Tuttle

Members: Peter Bonnie, Brady Koht, Sebastian Roe, Joseph Wickner, and Scott Melvin

○ **Weekly Summary**

With only four school weeks left in the semester our group is moving quickly to achieve our end of the semester goals. During the past week, we have made a couple of revisions to the design document. Also, the frame of the quadcopter has been completed but now needs to be cut out by the laser cutter. The flight controller has been experimented with slightly but still needs a lot of work before we have the quadcopter flying. The first, and biggest step, is getting a PPM signal from the microcontroller to communicate with the flight controller. Once this step is complete, all that is left to do is calibrate the device to our desire.

○ **Past week accomplishments**

- Quadcopter frame was completed in solid works. The design includes mounting holes for motors, flight controller, and ESCs. Also, certain areas have been cut out to reduce weight.
- The flight controller has been tested with USB connection to a computer. This allows to program the flight controller and calibrate different settings for the motors.
- The design document was revised and peer reviewed to ensure quality.

○ **Pending issues**

There are no pending issues at the moment since we have all the most important parts we need to work with for the rest of the semester.

○ **Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Peter	Added material to the design document and tested the multiwii GUI/Flight controller programming environment (just Arduino IDE)	6	27

Brady	Created more designs for the quadcopter frame in solid works.	5	27
Scott	Assisted with the peer review of the design document	6	28
Sebastian	Updated the website	5	28
Joe	Helped revise and add material to the design document. Revised design for the quadcopter frame	6	29

○ **Comments and extended discussion**

Connectivity with the flight controller to the GUI on a computer was easy to setup. Now with using the GUI, a user can see in real time how the flight controller moves, what signals it receives, and how the copter will react via the PID settings (proportional integral derivative). Now that we have a microcontroller to simulate a PPM signal, getting the flight controller to work how we want should be straight forward but will take a little longer than other parts of the project.

○ **Plan for coming week**

Two main goals for this week are to establish a working communication network between the microcontroller and the flight controller and to cut out the quadcopter frame. Once both objectives are complete, our project should move a lot faster and we will be closer to our goal for the end of the semester.

○ **Summary of weekly advisor meeting**

We did not meet with Professor Tuttle this week.