**EE CprE SE 492 – MAY1732**

**Crazyflie Swarm Senior Design Team**

**Weekly Report 6**

**2/19-2/27**

**Faculty Advisers**

Phillip Jones

Nicola Elia

|  |  |  |  |
| --- | --- | --- | --- |
| **Member** | **Position** | **Weekly Hours** | **Total Hours** |
| **Nick Robbins** | **Team Leader** | **7** | **129.5** |
| **Ben Nelson**  | **Key Concept Holder** | **15** | **115.75** |
| **Jake Frazier-Flores** | **Webmaster** | **8** | **106.25** |
| **Grant Manley** | **Key Concept Holder** | **7.5** | **101.5** |
| **Chengrui Yang (Roy)** | **Key Concept Holder** | **5** | **66** |
| **Cole Beaulieu** | **Communicator** | **7** | **130.5** |
| **Tianxiang Shen (Jesse)** | **Key Concept Holder** | **3** | **51.5** |

**This Week’s Progress**

1. Quads/Camera System
* Found all parameters, besides the MOI of propeller and motor individually, meeting with microcart early this week.
1. Ground Station/Wifi Systems/Firmware
* Confirmed that the groundstation produces (semi) reasonable outputs, started working to get the full chain of ESPs to work with the groundstation
* Stress tested the firmware and finishing the optimizing of it

**Pending Issues**

1. Begin the tuning of the controllers for the big quad
2. Meeting with microcart this week to get the final parameter
3. Working to stress test Groundstation with a finalized ESP set up

**Plan of Action**

1. Cole – Find final parameter and begin the big quad this week with Ian
2. Nick –Enter parameters into Ians system. Start tweaking proportional constant
3. Jake – help Ben with the groundstation
4. Grant – I’m going to continue working on flying the quad unless otherwise stated
5. Chengrui ­– helping test the PID value we found
6. Tianxiang – assist with PID values
7. Ben – Work towards getting a full test of basestation and esp set-up

**Individual Contributions**

Cole:

* Monday: 1 hour – meeting and discussing plan of action for the week with the team
* Thursday: 3 hours - getting remaining parameters for the big quad so that tuning can begin
* Friday: 2 hours – trying to get final parameter needed for flight, MOI of motor and prop, was not able to because of not able to get a solid way to have an instantaneous duty cycle change from 50 to 80 percent
* Sunday: 1 hour – weekly report

Nick:

* Monday: 2 hours, group meeting and moment of inertia testing
* Tuesday: 4 hour, finished moment of inertia testing
* Sunday: 1 hours, Revisited KD, KI values

Grant:

* Monday: 1.5 hour- team meeting and getting reports ready for our professors
* Wednesday: 1.5 hours – Helped Cole get measurements for quad and long discussion with Matt and Ian and what values we need to make our quad fly
* Sunday: 2 hours – working with MATLAB code for backup solution in case mesh network does not work

Jake:

* Monday: 1 hour – team meeting
* Tuesday: 2 hours – started stress testing the firmware
* Sunday: 5 hours – finished optimizing the firmware and practiced flying with the crazyflie

Ben:

* Monday: 1 hour – Meeting
* Wednesday: 3 hours – Trying to test the ground station code
* Thursday: 2.5 hours – Testing the ground station with MATLAB, starting to flash all the ESPs for a full test
* Saturday: 5.5 hours – trying to get an ESP setup that will work
* Sunday: 4 hours – continued fighting with ESPs

Tianxiang Shen:

* Monday: 1 hour – meeting
* Tuesday: 2 hours: assisted with the MOI testing

Chengrui:

* Monday: 1 hour – group meeting
* Tuesday: 2 hours – MOI measurements
* Thursday: 1 hour – center of mass
* Friday 1 hour – check some other measurements