

## **EE/CprE/SE 492 - Status Report 4**

February 27th - March 13th

**Group number:** may25-32

**Project title:** MicroCART mini: Microprocessor Controlled Aerial Robotics Team

**Client &/Advisor:** Dr. Phillip Jones

**Team Members/Role:**

- Daniel Zaucha: Client interaction, Communications Lead
- Jonah Upah: Hardware Lead, Team Secretary
- Ryan Lowe: Technical Advisor
- Yi Hang Ang: Software Lead

### **Weekly Summary**

This past week our team was focused on two different tasks. Yi and Jonah worked to implement the test stand data into the existing logging structure, some more pieces of how the logging is taking place has been discovered, but has led to more difficulties. Daniel worked to create documentation for setting up the lighthouse system based on the learning from last week's demo. A draft of the document was written and is currently undergoing some revisions. Daniel will also be adding a video that will support the written documentation. As a team we took inventory of the MP-4 material to determine if there was a need to purchase anything before students get to MP-4. Along with the inventory the drone health sheet was updated to reflect the current status of all the drones. We are now working towards creating the final version of the MP4 project image before we MP-4 begins in 488.

## **Past week accomplishments**

- Daniel Zaucha
  - CrazyFlie debugging - Health Sheet
  - Lighthouse work
    - Working with Ryan to prepare for the Scholars day presentation
- Jonah Upah
  - Still working on the test stand integration
    - Every step creates more questions
  - Little bit of inventory.
- Ryan Lowe
  - Still trying to work through getting the lighthouses to be able to maintain a steady flight
    - Been having lots of issues with the drone flipping over and crashing after the first flight
    - Also having lots of issues with even receiving signal from the lighthouses.
  - Looking into other demos that can be done with the light house
    - Swarm demo, controlling drone with Vive controller, Led-ring deck.
- Yi Hang Ang
  - Working down our issues list
    - USB driver issue (discussion)
    - Hardware checks/count (11 Crazyflies, 12 Test stands, 23 batteries, 5 radios)
    - Test stand integration with Jonah

## **Pending Issues/tasks**

- Logging

**Individual contributions**

NAME	Individual Contributions	Hours this week	HOURS cumulative
Daniel Zaucha	<ul style="list-style-type: none"> <li>• GUI efforts</li> <li>• CrazyFlie Debugging</li> <li>• Lighthouse Document</li> </ul>	18	125
Jonah Upah	<ul style="list-style-type: none"> <li>• Arduino connecting</li> <li>• Test stand correction</li> </ul>	14	104
Ryan Lowe	<ul style="list-style-type: none"> <li>• Lighthouse Work</li> </ul>	9	89
Yi Hang Ang	<ul style="list-style-type: none"> <li>• Graph logging timeline</li> <li>• Serial connection test code</li> </ul>	8	86

**Plans for the upcoming week**

- Daniel
  - QT - GUI work
  - Lighthouse Document
  - Lighthouse Video
- Yi
  - Test stand integration
  - Figure out period of logging blocks
- Ryan
  - Continue work with the Lighthouse Deck to work through problems with the crazyflie flipping over at the start and connection issues
  - Look into other demos that can be done with the light house
    - Swarm demo, controlling drone with Vive controller, Led-ring deck.

- Jonah
  - Get the test stand logger finished.
  - Want to work on scripting but it seems far fetched.
- Group Plan:
  - Finish launch day checklist

### **Summary of weekly advisor meeting**

These past few weeks have been eventful, albeit time heavy, with a successful scholar's day presentation where we were able to show off stabilized flight crazyflies with minimal manual input and some inspiration in the future collegiates. The next week was a bit of a blur where we checked on the amount of time remaining for the upcoming 488 class and so made a deadline checklist so that the project will be deployed fully working.

Website:

<https://sdmay25-32.sd.ece.iastate.edu/#teammembers>