

EE/CprE/SE 492 - Status Report 6

April 3rd - April 16th 2025

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 week was deployment. The team worked to stage all the lab material prior to Wednesday, and get the VM deployed with the help of ETG(IT). During the lab the team acted as TA helping students get started. During the labs the team identified issues with the lab manual and have made rolling revisions to improve it. Recently the TA help has been guiding students choices in PID constants. Most students will be starting Part 2 soon, the team will need to prepare to help students write the controllers.

Past week accomplishments

- Daniel Zaucha
 - Crazyflie drone healthcare
 - Drones 11, 12, 16, and one Unlabeled drone were unable to be reached via flashing as their radio channels were not able to be observed by any of the drone clients, leaving us with only 9 workable drones at our time of deployment.
 - Radio channel issue: For some reason, the radios were no longer seeable on channels greater than 100 when they were originally able to go up to 120.
 - USB unable to be reached by the drones: Drones were crashing when we were trying to connect them to the client to fix the radio issue since we could no longer reach them wirelessly.
 - TA for lab
 - MP-4 manual update
- Jonah Upah
 - TA for labs
 - Big MP-4 manual update
 - Updating MP-4 manual as I find issues
 - Fixing broken hardware
 - Drone 4
 - Arduino 8
- Ryan Lowe
 - MP4 Deployment
 - Design Document Spring

- Yi Hang Ang
 - TA'd Thursday and Friday sections
 - Finished updating the majority of MP-4 manual
 - Identified MP-4 manual problems
 - Fixed them
 - Added Calvin extra credit.
 - Found hardware issues, Arduino 8

Pending Issues/tasks

- Be a TA.

Individual contributions

NAME	Individual Contributions	Hours this week	HOURS cumulative
Daniel Zaucha	<ul style="list-style-type: none"> ● MP4 Deployment & TA Support 	16	154
Jonah Upah	<ul style="list-style-type: none"> ● TA ● Prepare everything 	20	154
Ryan Lowe	<ul style="list-style-type: none"> ● MP4 Deployment ● Design Document updates 	14	125
Yi Hang Ang	<ul style="list-style-type: none"> ● TA ● Prepare everything 	18	136

Plans for the upcoming week

- Daniel
 - TA & Crazyfie Health

- Yi
 - Continue to TA, help with part 2
 - Fix manual as needed.
- Ryan
 - TA for part 2 of lab
 - Finish Design Document
- Jonah
 - Fix drone 4
 - Validate arduino 8
 - Calvin bomb fix
 - Need to test.
 - If it works, buy him pizza.
 - NEW CONTROLLERS **NOT** working
 - They are not recognized by our client or bitcraze client
 - From reading the lab manual they seem to need a radio.
- Group Plan:
 - Need everyone to start looking at firmware.

Summary of weekly advisor meeting

Website:

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

Tasks / Issues:

4. **Test-stand**: VM crashes if Ctl-C is used to shutdown MP-4, while the Test-stand is plugged in.
(There is a potential fix)
5. **New Batteries**: Something appears to be different with the new batteries, making it a bit of a pain to plug them into the quadcopters (Haven't heard of this being an issue for students)