

Senior Design May 24, 32

MicroCART Senior Design Team

Week 7 Report

September 26 - October 2

Faculty Advisor: Philip Jones

Members:

Justin Kenny - Scribe

Steve Frana - Technical Lead

Trevor Friedl - Project Manager

Travis Massner - UI/UX Designer

Clayton Kramper - Technical Lead

Will Maahs - Team Organization Lead

Links

- [Shared Google Drive Folder](#)

Summary of Progress this Week

We are continuing work on MP-4, with members of the group being in different spots in regards to Part I or Part II. As we have been working through MP-4, we have been documenting various bugs and pain points we have found. We are beginning to attempt to diagnose the performance issues we are having with running the VM on our personal machines. We have reached out to ETG to get Virtual Box installed on the lab computers.

Pending Issues

- We have so far received no response from ETG about the lab computer Virtual Box installation.
- GUI troubles have made it difficult to do accurate PID tuning, making the second part of the lab somewhat more difficult.

Individual Contributions

Member	Contributions	Weekly Hours	Total Hours
Justin Kenny	<ul style="list-style-type: none"> ● Worked on Project Plan doc, slides, and recording ● Finished Part I of MP4 - PID tuning <ul style="list-style-type: none"> ○ Pitch attitude and roll attitude completed. ● Worked on Part II of MP4 <ul style="list-style-type: none"> ○ Currently debugging controller code. 	7	19
Steve Frana	<ul style="list-style-type: none"> ● In talks with ETG about virtualbox on lab computers ● Running performance analysis on and familiarizing myself with GUI code ● Helped some members with MP-4 code ● Running and improving upon my implementation of MP-4 part 2 code 	5	15
Clayton Kramper	<ul style="list-style-type: none"> ● Worked through MP-4 Part1 ● Began troubleshooting GUI on personal machine ● continued looking at the Git repo and videos 	4	13
Travis Massner	<ul style="list-style-type: none"> ● Finished troubleshooting MP-4 setup <ul style="list-style-type: none"> ○ Troubleshot drone/receiver connection ● Working on MP-4 Part 1 <ul style="list-style-type: none"> ○ Troubleshoot lagging problem with logging of crazyflie 	6	13
Will Maahs	<ul style="list-style-type: none"> ● Worked on better understanding PID loops ● Finished MP4 part 1 ● Started working through MP4 Part 2 ● Continued exploring the Git repo ● Started analyzing the crazy fly GUI code <ul style="list-style-type: none"> ○ gain understanding of the code ○ thinking of ways to improve it 	5	13
Trevor Friedl	<ul style="list-style-type: none"> ● Still progressing with MP-4 part 1, almost ready to work through part 2 <ul style="list-style-type: none"> ○ Had issues with getting crazyflie connected through bootloader, 	7	11

	<p>needed to reset .ova file being used</p> <ul style="list-style-type: none"> ● Worked with team on assignments and helped update project document during team meetings ● Started to populate gitlab with some milestones and issue tags <ul style="list-style-type: none"> ○ Will hopefully incorporate this soon once we break off into separate tasks ● Looked through some more MicroCART/488 lecture videos to understand some concepts a bit better <ul style="list-style-type: none"> ○ Found this PID article pretty interesting: https://realpars.com/pid-tuning/ 		
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Comments and Extended Discussion

Trevor:

- Note from observation, running 'make clean' broke the firmware package in the VM and prevented me from being able to flash the drone's firmware. Running make in any form after this has not so far been able to fix/revert this, you will most likely need to reload the VM image with Grant's provided .ova file.

Will

- One GUI improvement I think would be very beneficial, if we could implement a more efficient method of loading the coefficients from the JSON file for PID tuning. It is quite tedious to load in k values every time they are changed.

Plans for coming Week

- Finish MP-4 lab **(High)**
- Draft a follow up email to ETG to get Virtual Box installed **(High)**
- Work on Project Plan assignment **(High)**
- Figure out how to add the .ova file for the VM as an artifact on the Git repo. **(Medium)**
- Begin converting tasks into issue on GitLab **(Low)**