

Senior Design May 24, 32

MicroCART Senior Design Team

Week 28 Report

Apr 12 - Apr 19, 2024

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](#)
- [Tentative Project Gantt Chart](#)
- [Crazyflie Status](#)
- [Needed Documentation](#)
- [YouTube Slides/Scripts](#)
- [Git Branch Status](#)

Summary of Progress this Week

We have begun working on documentation and final deliverables for the class portion of 492. To do this, Git issues have been added to the issue board for all of the wiki and video tasks and they have been assigned to group members. We have begun working on the overall summary video of our progress and steps for the next team.

We made an attempt to solve the crazyflie timeout issue by changing the timeout value in the firmware, but this didn't have any effect on the setpoint clearing issue. We will dig more deeply into the firmware this week to try to get to the heart of this issue.

We started to clean up the Git repository according to the plan laid out last week. A document is linked above showing the status of all branches. We are currently working on moving the Lab1 and Lab2 firmware to the develop branch, but removing the submodules leads git to throw an LFS error that we are still working on solving.

Pending Issues

- Why doesn't changing timeout in firmware work?
- LFS files are still posing a barrier to fully removing submodules.

Individual Contributions

Member	Contributions	Weekly Hours	Total Hours
Justin Kenny	<ul style="list-style-type: none">● Tried to debug crazyflie setpoint timeout issue.● Began working on final deliverables (poster, report, etc.)● Worked on removing submodules and cleaning the git repository.● Assigned documentation tasks and began writing documentation.	12	185
Steve Frana	<ul style="list-style-type: none">● Documentation● Team Meeting● Helped with cross-compiling	5	150
Clayton Kramper	<ul style="list-style-type: none">● Worked on final deliverables● Began updating documentation on creating VM snapshot with Grant's fix	2	134
Travis Massner	<ul style="list-style-type: none">● Continued debugging crazyflie client not working on new VM● Brought MP4 cart back to lab● Began running diagnostics checks on MP4 drones● Team meeting	4	133
Will Maahs	<ul style="list-style-type: none">● Documentation for pycrocart and submodules● Created Git Issues based off of MP-4 Feedback● Debugging C++ GUI	5	151
Trevor Friedl	<ul style="list-style-type: none">● Helped 488 Students outside of class lab time with MP4 in-person● Team meeting● Started working on documentation as	6	136

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Comments and Extended Discussion

Plans for coming Week

- Debug cross-compile crazyflie firmware errors.
- Write startup script to run baremetal programs on the Pi without manual starting them through uboot.
- Complete more advanced ring buffer style shared memory program.
- Complete all documentation tasks on the git issue boards.
- Plotting Packet (Low Priority).
- Get FlyPi flying back in the air *without* the use of the test stand
- Incorporate feedback from MP4 into final VM iteration to give to next year's team.
 - Post MP4 crazyflie status check.
 - Refactor default time values for log blocks.
- Test last year's branches to determine what they are for/if they work.
- Determine if timeout is actually the issue with dropped setpoints
- Try to isolate what FreeRTOS functions are causing issues.

Fixes for next MP4 VM iteration:

- Getting rid of the shared_folder