Senior Design May22, 43

MicroCART Senior Design Team

Week 5 Report

October 20 - 26

Faculty Advisor : Philip Jones

Members:

Brandon Cortez - Team Lead

Reid Schneyer - Test Station Lead

Colton Glick - Git Wrangler

Ellissa Peterson - Tech Lead?

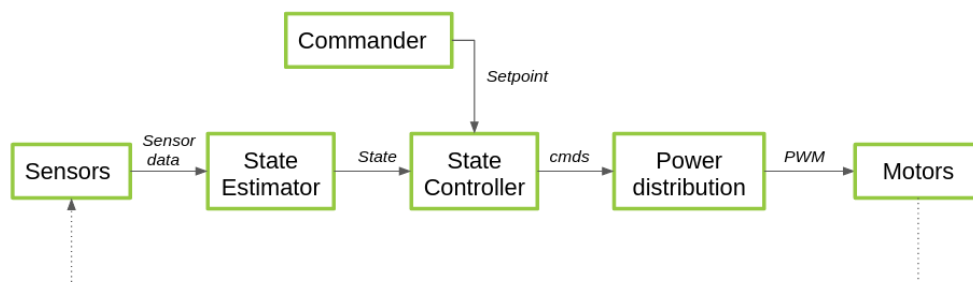Ryan Hunt - Firmware

Carter Irlmeier - Web Master

Zachary Eisele - TBD

Summary of Progress this Week

<insert text here>

Past Week Accomplishments

- Explored modifying the CrazyFlie firmware. Discovered stabilization architecture - Colton, Ryan, Carter

    ○

- Built and flashed modified firmware to CrazyFlie 2.0, changed system LED color and PID gains - Colton, Ryan
- Created basic control mapping for real flight RC controller. - Colton
- Demonstrated the crazyflie drones to the film crew and talked about our plans for the project - Colton, Reid, Ryan, Carter
- Started to control crazyflies with cf python library- Zach, Ryan
- Printed the mk2 test stand components - Brandon, Reid

Pending Issues

- Item - <team members who are responsible>

Individual Contributions

Team Member	Contributions	Weekly Hours	Total Hours
Brandon Cortez	Printed stand, began mk3 discussion	3	22
Reid Schneyer	Rotary encoder research, printed stand	3	23
Colton Glick	- Read through the Crazyflie firmware and documentation about stabilization - Modified some firmware code, built the firmware, and flashed to CF 2.0 - Created control mapping for the real flight RC controller - Demoed the drones capabilities	4	27
Ellissa Peterson			
Ryan Hunt	-Modified some firmware code, built the firmware, and flashed to CF 2.0 -looked into crazyflie initialization firmware -took part in photoshoot demonstrating drones -supported crazyflie control using python	5	23
Carter Irlmeier	-Started working with VirtualBox and BitCraze on the lab machines, cleaned up and started to label drone area, uploaded more files to the website, took part in photoshoot demonstrating drones	4	21

Zachary Eisele	-Investigated MicroCART git -Started to control crazyflies using cf python library -Looked into adapter for old groundstation to work with crazyflies	5	23

Comments and Extended Discussion

Task	10/10	10/17	10/24	10/31	11/7	11/14	11/21	11/28	12/5	12/12
Investigate existing firmware	D									
Make modular firmware		▨	▨	D						
Add wifi to Crazyflie				▨	▨	▨	D			
Test different control algorithms					▨	▨	D			
Develop test stand hardware	▨	▨	D							
Develop test stand firmware		▨	▨	D						
Develop ground station software		▨	▨	▨	▨	D				
Write lab instructions & documentation								▨	D	

Update on Project timeline, modular firmware in the works, still exploring firmware architecture.

Test stand hardware being 3D printed for proof of concept and to begin planning sensor integration.

Ground station software has not been started yet.

Plans for coming Week

- Modify firmware to make it easier to modify the stabilization code - Colton, Ryan
- Update documentation - Colton
- Evaluate and plan sensor integration with the printed test stand prototype - Brandon, Reid

Summary of Weekly Advisor Meeting

10-20-21 Meeting with Jones

Jones' questions: whos the person looking into the CLI/backend stuff? (zach and ryan)

Status report should start morphing into a cycle of tasks to do/blocked/completed as we make progress

quad encoder or magnetic encoder, 288 launchpads have quad hardware support

see if trinket m0 has quad hardware support, otherwise might go with nano for avr over samd