

# Senior Design May 24, 32

## MicroCART Senior Design Team

### Week 11 Report

*October 24 - October 31*

*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](#)

#### Summary of Progress this Week

We have divided into three groups of two and begun to work three separate tasks: rewriting the crazyflie adapter and crazyflie groundstation using cflib, getting the Pycrocart GUI slotted into the infrastructure, and improving error handling for the current GUI.

For the groundstation rewrite, we were able to get the outputoverride command working and the getparam command partially working. We spent a lot of time trying to figure out exactly the structure of the packets being sent and received and dealing with type issues with different subsets of data. We are close to getting a response sent back from getparam, which should make the process for making future command processing easier.

#### Pending Issues

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## Individual Contributions

Member	Contributions	Weekly Hours	Total Hours
Justin Kenny	<ul style="list-style-type: none"> <li>• Worked on Testing doc, slides, and recording</li> <li>• Used terminal outputs to decode outputoverride packet structure</li> <li>• Create packet encoding functions</li> <li>• Debugged type issues for the getparam command.</li> </ul>	7	46
Steve Frana	<ul style="list-style-type: none"> <li>• Reading through cflib documentation</li> <li>• Working on cflib_groundstation</li> <li>• Worked with Justin to debug</li> <li>• Looked into different packet protocols/scheduling we could use as part of a Real-Time systems project</li> </ul>	7	40
Clayton Kramper	<ul style="list-style-type: none"> <li>• Rewatched backend videos</li> <li>• Reading documentation on ground station</li> <li>• Began work on PycroCart</li> <li>• Started rewrite of crazyflieprotoconnection</li> </ul>	5	31
Travis Massner	<ul style="list-style-type: none"> <li>• Continued watching MicroCart videos</li> <li>• Began looking into code of current GUI</li> <li>• Still looking to backend videos/code</li> </ul>	4	31
Will Maahs	<ul style="list-style-type: none"> <li>• Rewatching backend videos</li> <li>• Reading documentation on ground station</li> <li>• PycroCart</li> <li>• Started rewrite of crazyflieprotoconnection to slot pycrocart ino MicroCart infrastructure</li> </ul>	5	33
Trevor Friedl	<ul style="list-style-type: none"> <li>• Continued to read backend code for high-level understanding</li> <li>• Spent some time getting practice flying drones within the lab</li> <li>• Reading more into improving the current GUI: <ul style="list-style-type: none"> <li>○ Issues with setpoints?</li> <li>○ Look into improving the algorithm for printing/calculating “nodes” to GUI</li> <li>○ Planning to write C code to track</li> </ul> </li> </ul>	4	30

	relative latency, estimated error, data transfer speed, etc., to help in debugging different issues from GUI		
	<ul style="list-style-type: none"><li>● Started reading into some hardware schematics for different Bitcraze components</li></ul>		

## Comments and Extended Discussion

### Plans for coming Week

- Watch remaining instructional videos in the bootcamp **(High)**
- Make Pycrocart GUI MP-4 viable and determine how to slot it into infrastructure. **(High)**
- Edit current GUI to improve error handling with backend interactions. **(High)**
  - Work on adding debugger plans & implementation into frontend code
  - Track connections from backend -> frontend and the other way around
  - Look into revising/improving node calculations within the backend
- Combine crazyflie groundstation and crazyflie adapter using cflib. **(High)**
  - Finish debugging getparam.
  - Work on figuring out the structure for the other needed packets so more functions can be made.
- Request MicroCART user on lab computer **(High)**
- Test packet scheduling protocols **(Medium)**
- Begin to consider changes to make for MP-4 lab documentation to push towards improvements **(Medium)**
- Add team information into the team website **(Low)**