

Senior Design Team may23-45: MicroCART Team

Week 9 Status Report (10/14-10/20)

Members:

- Cole Hunt
- Connor Ryan
- Emily Anderson
- Gautham Ajith
- Grant Giansanti
- Tyler Johnson
- Austin Beinder

Weekly Progress Summary

- Started on PCB design ([high-level diagram](#))
- Basic operation testing on Pi Zero W
- Generated plan to run existing software on an operating system

Pending Issues

- Waiting to get a desktop
- Raspberry Pi Zero only has two PWM channels
- IMU situation: breakout boards have different pinouts.
 - Jumper connections?
 - Make our own breakout boards?
 - Only design for one IMU?
- Do we need the MP-4 VM image or can we use a base Ubuntu image and install the drivers ourselves.
- Emily running into issue in screenshot below
 - Has this been seen before?
 - Any known solutions?
 - Can we manually install lab instead of using image?

Appliance settings

These are the virtual machines contained in the appliance and the suggested settings of the imported VirtualBox machines. You can change many of the properties shown by double-clicking on the items and disable others using the check boxes below.

Virtual System 1

- Name: 488_MP-4_VM_1.1
- Guest OS Type: Ubuntu (64-bit)
- CPU: 2
- RAM: 4096 MB
- DVD:
- USB Controller:
- Sound Card: ICH AC97
- Network Adapter: Intel PRO/1000 MT3
- Storage Controller (IDE): PIIX4
- Storage Controller (IDE): PIIX4
- Storage Controller (SATA): AHCI
- Virtual Disk Image: 488_MP-4_VM_1.1.ova
- Base Folder: C:\Users\emily\VirtualBox VMs
- Primary Group: /

Machine Base Folder: C:\Users\emily\VirtualBox VMs

MAC Address Policy: Include only NAT network adapter MAC addresses

Additional Options: Import hard drives as VDI

Appliance is not signed

Buttons: Restore Defaults, Import, Cancel

Individual Contributions

Team Member	Contributions	Hours	Total Hours
Austin Beinder	<ul style="list-style-type: none"> ● Flight training: 5 battery cycles ● Design Doc ● Drone Simulation Webinar 	4	24
Cole Hunt	<ul style="list-style-type: none"> ● Flight training: 4 battery cycles ● Look through FreeRTOS Source <ul style="list-style-type: none"> ○ Research ways to run FreeRTOS on Pi Zero ● Look through CrazyFlie Firmware Source 	3	15
Connor Ryan	<ul style="list-style-type: none"> ● Flight training: 4 battery cycles ● PCB Design 	4	19
Emily Anderson	<ul style="list-style-type: none"> ● Flight training: 1 battery cycles 	4	9

	<ul style="list-style-type: none"> • Working on getting lab imported, blocked by screenshot in pending issues • Catching up 		
Gautham Ajith	<ul style="list-style-type: none"> • Flight training: 4 battery cycles • Not feeling well 	0	14
Grant Giansanti	<ul style="list-style-type: none"> • Flight training: 2 battery cycles • Read into software PWM • Bare Metal OS 	3	17
Tyler Johnson	<ul style="list-style-type: none"> • Flight training: 7 battery cycles • Worked on design document • Helped with PCB design 	4	19

Comments:

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Next Week Plans

- Finish PCB Design
- Test performance of software PWN pins