

EE CprE 492 – May 21 - 27

MicroCART Senior Design Team

BiWeekly 1 Report

January 25 - February 7

Faculty Advisors: Phillip Jones

Team Members:

Alex Bjerke — *Project Manager*

Amith Kopparapu Venkata Boja — *Embedded Software Lead*

Theodore Davis — *Embedded Hardware Lead*

Grayson Goss — *Technical Lead | CAD Design Lead*

Hannah Mohamad — *Team Webmaster*

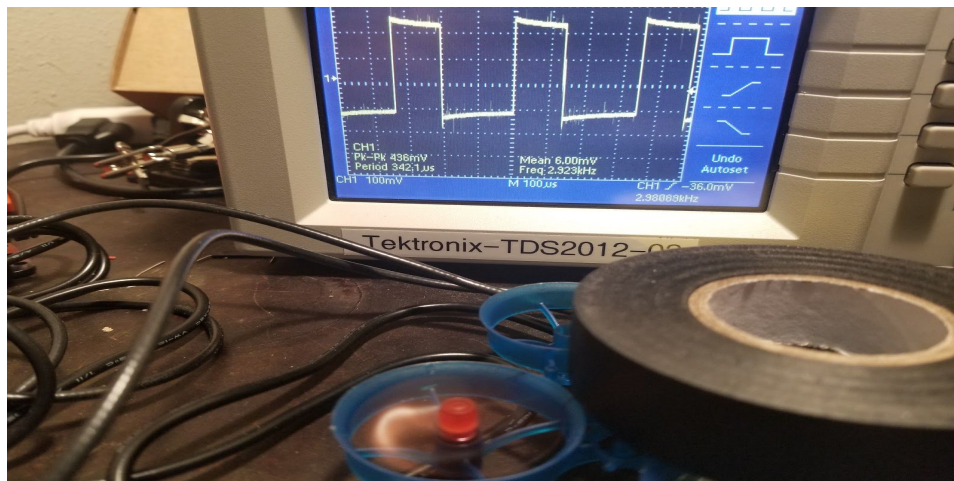
Russ Paulsen — *Test Station Lead*

Alfonso Raymundo — *PCB Design Lead*

Trent Woodhouse — *High-Level Software Lead*

Past Week Accomplishments

- Ground Control - Created a set of programs meant for simulating the test station, drone, and UI that is used to show the data coming from the UI, and getting directed to the drone or test station, then getting a response back to the UI. All of this data transfer is handled by ground control.
- Motor control demonstration - Theodore
 - Controlled motor speed by physically swapping gate input on MOSFETS to different pins each with a unique duty cycle.
 - Tested at 20, 40, 60, 80 percent of duty cycle.



Pending Issues

- Atmel Start configuration never seems to work.
- Build a physical modular drone on breadboard

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Alex	Ground control using select(). Allow clean device connecting and disconnecting by command.	6	76
Alfonso	1) Looked into how much power the Drone motor needs. They need 3.7v so I picked a 3.7v Lithium Polymer Battery to have Jones order for us. 2) I broke down Pin_Layout_Image_v5 into small parts for the team called v5.1 - v5.4 3) Fixed Wiring in Pin_Layout_Image_v5 so motors are powered from BAT pin over 3v Pin. 4) Paperwork for class & team	8	78.75
Amith	Worked on figuring out the issue with SCL and SDA pins on the board. Tried to rebuild the starter project for Atmel. Helped Theo with setting up the UART.	6	74
Grayson	Modeled preliminary design for hoverlock	6	79
Hannah	Start to look into materials that are for the project. Read datasheets for pins configurations	2	47
Russ	Thought of some ideas for hoverlock and now looking into the old design to modify to work well with new ideas.	4	56
Theodore Davis	Motor Demonstration / initial UART testing	8	78.5
Trent	Connected UI with C server, able to pass messages	2	50

Plans for Coming Week

- Demonstrate UART functionality - Theodore
 - Transmit data on PB16 (TX)
 - Receive data on PB17 (RX)
 - Will be testing functionality by having an OScope monitoring RX as well as an Arduino Uno hooked up to both pins to receive data.
 - Turn on red LED on receiving data on TA
- Rebuild the modules initializations - Amith
 - Finish setting up the initializations for I2C, UART, Timer, SPI and Clocks in Atmel Start
- Finish I2C functionality - Amith
- Build Modular Drone on Breadboard - Fonzy

- Meet up with Theo & build Drone from Pin_Layout_Image_v5
- Test Drove & see if it works.

- Make BOM list of Parts - Hannah/Fonzy
 - Part Number: Find the manufacturing number for each part
 - Part Name: Find the name of each part used
 - Description: Make a detailed description of each part that will help identify specific parts more easily
 - Quantity: Record the number of parts we used/order
 - Datasheets: Find Datasheets for each part
 - Costs: Find the cost of each part & total them