EE CprE 492 – May 21 - 27
MicroCART Senior Design Team
Week 2 Report

January 31 - February 7
Faculty Advisors: Phillip Jones

Team Members:

Alex Bjerke — *Project Manager*

Amith Kopparapu Venkata Boja — *Embedded Software Lead*

Theodore Davis — *Embedded Hardware Lead | System integration*

Grayson Goss — *Technical Lead | CAD Design Lead*

Hannah Mohamad — *Team Webmaster*

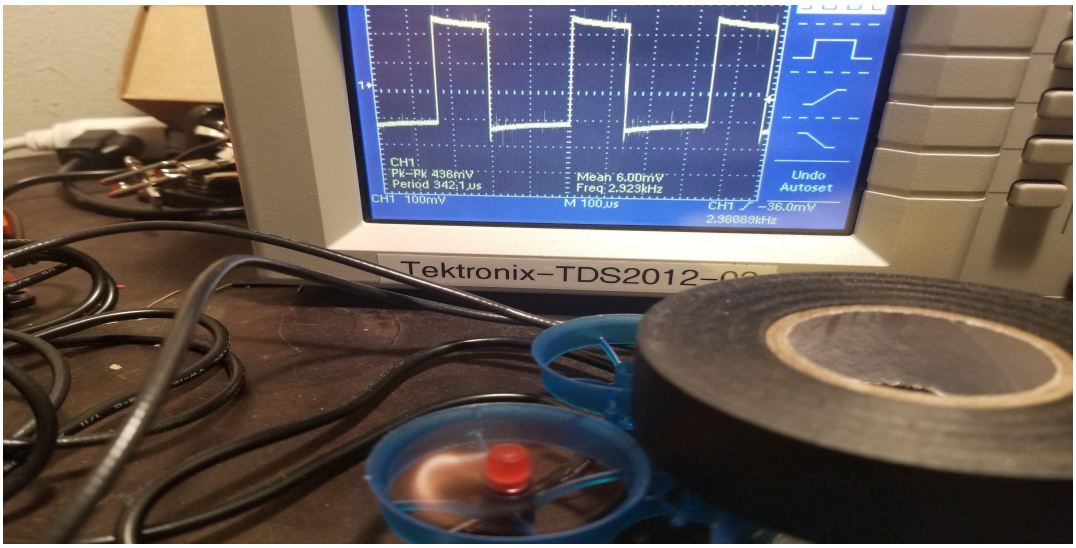
Russ Paulsen — *Test Station Lead*

Alfonso Raymundo — *PCB Design Lead*

Trent Woodhouse — *High-Level Software Lead*

Past Week Accomplishments

- 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.



- Ground Control - using select() now; can connect/disconnect devices on command; made more modular

Pending Issues

- Atmel Start configuration never seems to work.

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	4 7
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
- Ground Control (C) - Alex
    - Functions for packing/unpacking packets to and from the drone
    - Incorporate supported message types
    - Potentially start on logging
- Test Station
    - Finalize hoverlock system, choose between old and new test station designs
    - Begin data collection tests from sensor
    - Grab dimensions of drone for finalized platform CAD.