

EE CprE SE 492 – MAY15-28

MicroCART Senior Design Team

Weekly Report 19

February 9 - 15

Faculty Advisers

Phillip Jones

Nicola Elia

Member	Position	Weekly Hours	Total Hours
Paul Gerver	Key Concept	0	157
Tyler Kurtz	Key Concept	5	160.5
Ravi Nagaraju	Webmaster	5	96
Adam Campbell	Webmaster	2	96.5
Joe Benedict	Communications	3.5	194.25
Jacob Rigdon	Communications	4	109
Matt Vitale	Team Lead	1	135
Matt Post	Key Concept	-	29

Progress

- More PCBs constructed and tested
- Logging & Documentation work

Plan of Action

- 1) Manual flight demonstration is the highest priority milestone at this time
- 2) Develop data capture from sensor board and camera system for comparative analysis
- 3) Develop data capture of PID coefficients, input signals and motor output (maybe) for plotting and analysis

Pending Issues

- Ran into issues this week with conflicting schedules – hopefully next week will prove better for productivity

## Contributions

Paul – 0 Hours, 157 Total

- Unfortunately unable to work on senior design this week (I've gotten swamped with HKN things)

Tyler – 5 Hours, 160.5 Total

- Magnetometer & log file formatting

Ravi – 5 Hours, 96 Total

- Website work - 0.5
- Tested motor indicator board with Joe and Matt V. - 2
- Created testing documentation for motor PCB board - 2.5

Adam – 2 Hours, 96.5 Total

- Working on logging output to the right format

Joe – 3.5 Hours, 194.25 Total

- Meeting with client - 0.5
- Lab work - 3
  - Set up test protocols for motor battery monitoring circuit
  - Ran through all tests successfully with Ravi and Matt V
    - Diode test for both LEDs using multimeter
    - Tested reverse polarity indicator
    - Tested low battery indicator with partially charged battery
    - Tested low battery indicator with no battery
    - Determined low battery indicator threshold
  - Took readings from ADC output to Zybo board at various battery input voltages ranging from 0.0 V to 12.0
  - Prepared testing platform for use in the 488 lab

Jacob – 4 Hours, 109 Total

- Client meeting – 1
- Weekly report – 1
- Website research - 2

Matt V. – 1 Hours, 135 Total

- Identified the issue in the logging (quadPWM exit status). Still need to contact Aaron

Matt P. – 0 Hours, 29 Total

- Nothing Reported

## Meeting Minutes

### 1) Overview of WSR

- Regulator board constructed - testing will be performed today
- Logging
  - Quad -Tyler and Adam have developed a successful solution for quad data
  - Base-Station - Ravi and Matt V collaborated with OmniCoor on base station solution. Performed demo of their logging tool
- ESC pending issue needs to be checked - Tyler and Joe will be checking PWM waveforms with an oscilloscope

### 2) Website

- Changes will be made - Dr. Jones wants a refined and attractive website

### 3) Data logging

- Discussed saving raw data onboard the Quadcopter in binary in order to save memory space and faster download speed

### 4) Failsafe kill-switch

- Determined that it can be set up in-line in the system and controlled by the transmitter using one of the channels on the receiver