

EE/CprE/SE 492 BI-WEEKLY REPORT 2

January 27th – February 10th

Group number: sdmay23-13

Project title: Prosthetic Arm

Client &/Advisor:

Dr. Santosh Pandey

Team Members/Role:

Erik Raman — Software

Jack Vetsch — Electrical

Jacob Eisbrenner — Mechanical/ Electrical

Scott Bolek — Electrical

Sean Gray — Software/Electrical

Jeremy Wallace — Electrical

Leo Forney — Software

Bi-Weekly Summary:

Continued work on recording EMG signal from medical pads. Motherboard redesign was sketched out and traced within KiCAD. Research finished on BMS circuit design and motor driver board sketch and KiCAD design are well underway.

During the time period:

Leo and Erik:

Worked on setting up simulations and scenarios for the motors that would be comparable to the signals they would receive from the microprocessor and amplifier being generated by the emg pads.

Jacob:

Finished work on the mother board design and continued work on the forearm of the prosthetic arm. Helped work on driverboard layout and researched different methods to generate a better signal from the emg pads.

Jack:

Found a suitable BMS circuit for the battery being used as well as continued to work on the driver board in KiCad for fabrication.

Jeremy and Sean:

Continued to work on the signal processing from the emg pads. The amplifier circuit originally used was scrapped and reworked. Also development of a second amplifier that will aid in signal reception began.

Pending issues

There are still issues with getting the signal from the emg pads and the amplifier. We think we may have finally figured out what the issue is and have a solution. But we burnt out the components we were using.

Individual contributions

<u>NAME</u>	<u>Individual Contributions</u> <i>(Quick list of contributions. This should be short.)</i>	<u>Hours this 2 week period</u>	<u>HOURS cumulative</u>
Jack Vetsch	BMS circuit, Driver board	8	64
Jacob Eisbrenner	Forearm and Hand design, Motherboard, EMG, Driver board	26	148
Erik Raman	Software design, Motor control	5	66
Jeremy Wallace	EMG signals, amplifier design, BMS research, Documents	6	85
Leo Forney	Software design, Motor control	7	78
Sean Gray	EMG signals, amplifier design, Software design	5	68
Scott Bolek	Document updating	4	60

Plans for the upcoming weeks :

- Continue work on getting the signals from the EMG pads.
- Finish running simulations on our motors.
- Continue work on the forearm design of our arm.
- Finalize any pending orders.
- Start looking into the implementation of the different aspects of the project.