

## **EE/CprE/SE 492 BI-WEEKLY REPORT 4**

**March 3rd – March 18th**

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**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**

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### **Bi-Weekly Summary:**

*Finished work on recording EMG signal from medical pad/ amplifier. Motherboard redesign was finalized. Design in process of finalization on BMS circuit design and work began on integrating into designs. Motor driver board sketch and KiCAD design are complete.*

### **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. Additionally accumulating header files from the BIOS that we can use to initialize the pins that are needed for I/O.

#### **Jacob:**

Completed work on EMG amplifier, worked on forearm as well as finalized driverboard/motherboard. Completed necessary design changes needed on different parts of the hand and sent them for reprinting. Work also began on integrating BMS design.

#### **Jack:**

Integration of BMS and continued to work on the driver board in KiCad for fabrication.

#### **Jeremy and Sean:**

Completed to work on the signal processing from the emg pads. EMG amplifier tested and functioning, work begun on recording signals for software crew

#### **Scott:**

BMS circuit design as well as updating of website and documentation

### **Pending issues**

From now the only pending issue remaining seems to be scheduling time to finish integration of systems

**Individual contributions**

<b><u>NAME</u></b>	<b><u>Individual Contributions</u></b> <i>(Quick list of contributions. This should be short.)</i>	<b><u>Hours this 2 week period</u></b>	<b><u>HOURS cumulative</u></b>
Jack Vetsch	BMS circuit, Driver board	12	80
Jacob Eisbrenner	Forearm and Hand design, Motherboard, EMG, Driver board	36	204
Erik Raman	Software design, Motor control	2	68
Jeremy Wallace	EMG signals, amplifier design, BMS research, Documents	7	102
Leo Forney	Software design, Motor control	5	89
Sean Gray	EMG signals, amplifier design, Software design	8	82
Scott Bolek	Document updating, BMS circuit design	8	74

**Plans for the upcoming weeks :**

- Finalize BMS
- Finish running simulations on our motors.
- Finish work on the forearm design of our arm.
- Finalize any pending orders.
- Start looking into the implementation of the different aspects of the project.