University of Washington
Department of Electrical Engineering
BEE 425, Winter 2019

Arduino ESC:
5/12 - 5/18 Weekly Report

Recap

Recap of Last Week

- Got motor running
- Started finalizing high power PCB

Tasks Calendar

Task	Priority	Who	Due Date*
Complete Circuit Schematic	1	Evan, Landon, Garrett	4/10
Complete PCB layout	1	Garrett, Landon	4/11
Check PCB design	2	All	4/12
Order PCB	2	Minh, Landon	4/13
Order external parts	2	Garrett	4/13
Organize Parts List	3	Garrett, Minh	4/12
Solder parts	2	Mark	4/28
Finished High Power PCB design V1		Garrett, Landon	
Finish Code	1	Landon, Garrett, Evan	5/17
Create high current design	1	Minh	5/16
Order 2nd PCB	2	Garret	5/16
Order 2nd BOM	2	Minh, Garret, Landon	5/16
Perform tests	2	All	5/16
Review final report sent by Randy	4	All	
2nd PCB and parts arrive ETA	N/A		5/30
Hopefully high power PCB’s soldered		Mark	6/2
Have final report ready to be reviewed	2	All	5/31

Perform high power tests	1	All	6/5
Poster board	1	All	6/13
PowerPoint Slides	1	All	6/13
Final Report Finished	1	All	6/13

Green = Complete
Yellow = In progress
Red = Behind
* Due date means if we don't meet this date, chances this project doesn't complete this quarter rises.

Information for This Week

Goals to Work on This Week

High Priority	Finish code to debug Finish design for high power PCB Have Mark look over PCB design Order High Power PCB
Mid Priority	Order ● Battery power supply + charger ● High power motor ● High gauge wire + connectors + lugs ● BOM Add our current work to the final report ● While it's still fresh in our minds
Low Priority	

Updates and New Information This Week

- Too many vias to ground plane causes loss of copper for solid regions
- Mark will solder multiple PCB's for us if needed
    - Turn around time unknown
    - Looks like some issues came up with his house

Thing to Think About This Week

- We can test setting things up with the battery and PWM before the PCB is soldered
- Can also start testing sensors
- Think of a way to hold our Arduino and PCB that wouldn't **kill** us or anyone during the presentation

Tasks Worked on

Minh	• Contact Mark about final changes for PCB
	• Started working on PowerPoint
	  ○ See folder for good reference for PowerPoint + Presentation
	• Started looking into Poster board
	• Checked everything off for this final stage
	• Ordered remaining materials with Garrett and Landon
	  ○ Battery + Charger have arrived

Landon	• Helped Garrett in changing the code for the high power board and components, specifically changing the registers. • Filled in information for sections of the final report. • Made final PCB check for clearance and exposing copper (with Minh and Garrett). • Ordered misc. Parts for the high power test setup. ○ Heatsinks, wiring, battery cutoff, battery splice and headers have all arrived.

Garrett	• Worked on the code for the high power PCB
	  ○ Designated pins and names based on the high power PCB design
	  ○ Configured the code for the addresses on the high power driver
	• Worked on the high power PCB design
	  ○ Worked with Minh and Landon finalizing the high power PCB design
	• Ordered parts for high power design
	  ○ Ordered PCB, spare arduino mega, all of the components for the high power board

Evan	Asked Evan to fill this in Sunday and Monday. Haven't gotten a response.

Assignments

	Assignments
Anyone	• Work on final report • Work on PowerPoint • Think about how we want to display the project safely
Minh	•
Landon	•
Garrett	•
Evan	•

Challenges

Risk	**Countermeasure**
High power PCB might not work	Be safe and try not to die. Order multiple PCB's Present what we have with low power working
Power supply for different motors we're testing	Use PWM to control voltage and current levels
Time is short	Can't believe we might actual finish

Updated Project Milestones

Phase	Action or Deliverable	Planned		Updated Actual Date
		Start Date	End Date	
Prototyping	Finish PCB Design	4/1	4/22	4/22
	Generate a BOM for Prototypes	4/10	4/22	4/22
	Order parts	4/23	4/23	4/23
	Finish software/firmware development	4/20	4/29	5/18
	PCB's arrive	4/29	4/29	4/29
	Solder components	4/30	5/1	5/6
	Finish tests	5/1	5/3	5/19
2nd Version	Finish 2nd PCB Design	4/22	5/3	5/16
	Order 2nd PCB	5/3	5/3	5/16
	Solder 2nd PCB	5/23	5/27	6/2
	Test 2nd PCB	5/29	5/31	6/5
Presentation	Final Report	5/10	6/2	
	Powerpoint Slides	5/27	6/11	6/13
	Practice Presentation	6/8	6/13	6/13

Agenda for next week

- Get PCB + materials to Mark
- Set up low power PCB with battery + motor
- Integrate sensors
- Final Report

Questions and Comments for Randy, Joe or Mark