

Project Status Letter Week 8
 Covering Period from 3/18/2019 to 3/24/2019
 Prepared by Alex Kmetz and Katie Lee

Weekly Team Goals

Week		Complete
7	3/10/2019 - 3/17/2019	
1	2D "Enclosures" Planned, Designed, and Reviewed	
2	Budget Summary and Plan Rev. 2 Complete and Delivered	
3	First Draft ATP submitted to Professors for review	

Week		Complete
8	3/17/2019 - 3/24/2019	
1	2D "Enclosures" Submitted to Machine Shop to be Fabricated	
2	Dyno Room Configuration Planned, Designed, and Reviewed	
3	First Draft ATP submitted to Professors for review	

Week		Complete
9	3/24/2019 - 3/31/2019	
1	2D "Enclosures" Submitted to Machine Shop to be Fabricated	
2	Dyno Room Configuration Planned, Designed, and Reviewed	
3	First Draft ATP submitted to Professors for review	

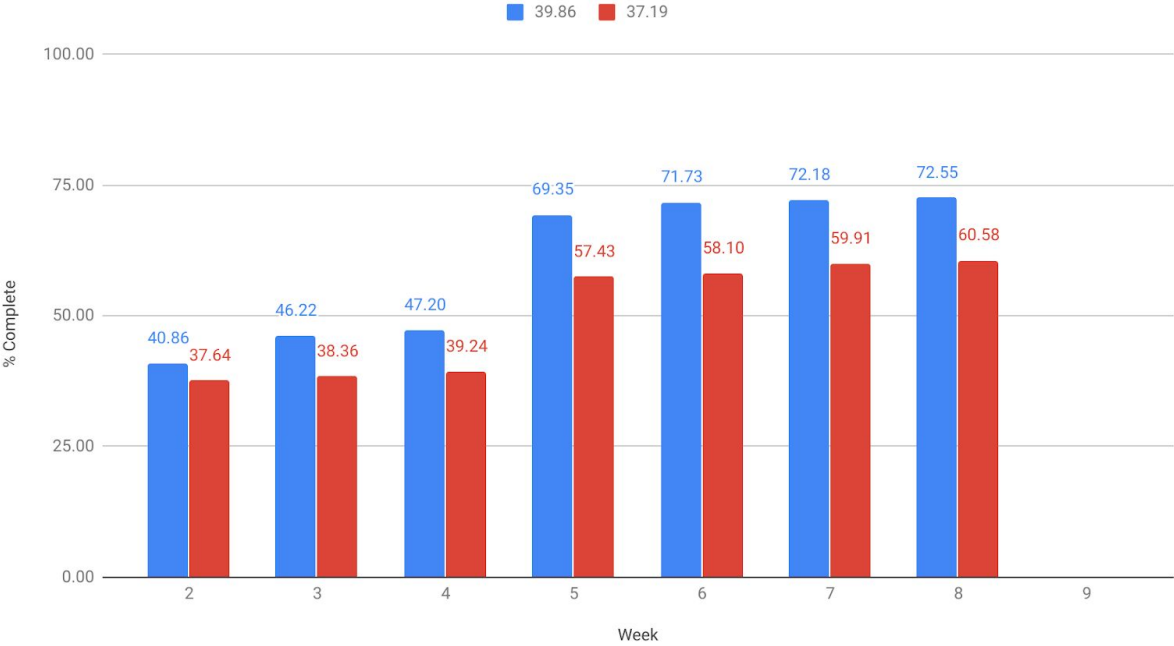
DYNO and CAR Integration Action Tracking

Completion of Previous Semester Goals: 91%

- Missing Completions: SCADA Connectivity, Full Motor Testing Setup, TSI Board

Completing of Current Semester Goals: 60.58%

Projected Progress and Actual Progress



Task / Item	In Progress Projected (%)	In Progress Actual (%)	Complete	Dependencies
Motor Spinning in Dyno Room	100.00%	100.00%	No	Motor Purchased Motor Controller Purchased Pulley / Shaft Fabricated Motor Installed in Motor Mount MCS Installed in Fixture Pulley / Shaft Connected to Motor
Motor Purchased	100.00%	100.00%	Yes	
Motor Controller Purchased	100.00%	100.00%	Yes	
Motor Controller Connected to TSI, Cooling, and Motor in Dyno Room	100.00%	100.00%	No	Motor Controller Purchased MCS / TSI / Cooling Fixture Fabricated TSI Board Complete TSI Mounting Plate Complete
Motor Mount Fabricated	100.00%	100.00%	Yes	
Motor Installed in Motor Mount in Dyno Room	100.00%	100.00%	Yes	Motor Purchased Motor Mount Fabricated
Pulley / Shaft Fabricated	100.00%	100.00%	Yes	

Pulley / Shaft Connected to Motor and Mounted in Dyno Room	100.00%	100.00%	No	Motor Purchased Pulley / Shaft Fabricated
MCS / TSI / Cooling Fixture Fabricated	100.00%	100.00%	Yes	
MCS Installed in TSI Enclosure	50.00%	0.00%	No	TSI Enclosure Fabricated
GLV Board Manufactured	78.57%	71.43%	Yes	
GLV Mounting Plate Manufactured	100.00%	33.33%	Yes	
Safety Loop Testing Panel Mounted in Dyno Room Rack	100.00%	90.00%	Yes	
Safety Loop Functional In Dyno Room	100.00%	66.67%	Yes	GLV Board Manufactured
GLV Enclosure Manufactured	33.33%	0.00%	No	
TSI Board Manufactured	78.57%	71.43%	No	
TSI Mounting Plate Manufactured	62.50%	25.00%	Yes	
TSI Throttle / Brake Control Panel Manufactured	66.67%	66.67%	Yes	TSI Board Manufactured TSI Mounting Plate Manufactured
TSI Enclosure Manufactured	50.00%	0.00%	No	
TSI Firmware Written	100.00%	100.00%		
Cooling Loop Filled with Water and Tested For Leaks	100.00%	100.00%	Yes	
Cooling System Mounted on Fixture in Dyno Room	100.00%	100.00%	Yes	MCS / TSI / Cooling Fixture Fabricated
Cooling System Connected to MCS and Motor in Dyno Room	100.00%	100.00%	Yes	MCS / TSI / Cooling Fixture Fabricated
Cooling System Connected to TSI in Dyno Room	100.00%	80.00%	No	
Cooling Enclosure Manufactured	20.00%	0.00%	No	
TSV Packs Manufactured	33.30%	16.67%	No	
TSV Packs Connected to Motor Controller in Dyno Room	0.00%	0.00%	No	
TSV CellMan Boards Fabricated	46.15%	38.46%	No	
TSV SegMan Boards Fabricated	33.33%	20.00%	No	
TSV PackMan Boards Fabricated	50.00%	50.00%	No	
TSV Powering Motor via Motor Controller in Dyno	0.00%	0.00%	No	TSV Packs Manufactured PackMan Boards Fabricated CellMan Boards Fabricated SegMan Boards Fabricated
TSV Firmware Written	12.50%	0.00%		

SCADA Recording Data and Writing to a File	100.00%	71.43%	No	
SCADA Displaying Data to Rack Monitor in Dyno Room	75.00%	75.00%	No	
SCADA Communicating with GLV in Dyno Room	100.00%	100.00%	Yes	GLV Board and Mounting Plate Integrated
SCADA Communicating with TSI in Dyno Room	75.00%	75.00%	No	TSI Board and Mounting Plate Integrated
SCADA Communicating with Motor Controller in Dyno Room	100.00%	75.00%	No	
SCADA Communicating with TSV in Dyno Room	0.00%	0.00%	No	
SCADA Displaying Data to GLV Screen	0.00%	0.00%	No	
All Connecting Wires Produced with Correct Connector Types	100.00%	100.00%	Yes	
Dyno Room Testing Plan Complete	100.00%	100.00%	Yes	
Dyno Room Wiring Diagram Complete	100.00%	100.00%	Yes	
All Subsystems fully wired in Dyno Room	100.00%	100.00%	Yes	
All Tests According to Test Plan Run in Dyno Room	100.00%	0.00%	No	
Car Testing Plan Complete	0.00%	0.00%	No	

Project Item Completion Chart:

Team	Tasks Completed	Tasks Planned for Next Week	Proposed Changes	Overdue WBS Items
VSCADA	none	<p>Sam: SCADA Configuration changes</p> <p>Implement a software watchdog</p>	none	<p>Sam: SCADA.5.1 - VSCADA and MCS connected via CAN</p> <p>SCADA.5.2 - VSCADA receiving data from MCS Sensors</p> <p>SCADA.5.3 - VSCADA sends warning for error sensor data</p> <p>Zian: SCADA.2.1 - VSCADA and TSI Connected via CAN</p> <p>SCADA.2.2 - Receiving Data from TSI Sensors</p>
TEST	none	<p>Katie: M.2.3 - ATP Submitted for Review</p> <p>ATP_Draft_6 (Fall)</p> <p>ATP_Draft_1 (Spring)</p> <p>Dyno Room Testing Layout Designed and Approved</p>	none	<p>Katie: M.2.3 - ATP Submitted for Review</p> <p>ATP_Draft_6 (Fall)</p> <p>ATP_Draft_1 (Spring)</p>
GLV	none	<p>Max: GLV.2.1 - Enclosure Designed, Approved, and Submitted to machine shop</p> <p>GLV.3.1 - Subsystem Testing Plan Submitted and Approved by System</p>	none	<p>Max: GLV.1.11 - PCB Respun and Populated</p> <p>GLV.2.1 - Enclosure Designed, Approved, and Submitted to machine shop</p> <p>GLV.2.2 -</p>

		Engineers		Enclosure Parts Acquired GLV.2.3 - Enclosure Assembled GLV.3.1 - Subsystem Testing Plan Submitted and Approved by System Engineers
TSI	<p>Xiaonan: TSI PCB Submitted for Soldering Over Spring Break</p> <p>Yuqiu: TSI.4.4 - Firmware I/O Functionality Delivered</p> <p>TSI.6.3 - PCB Test Fixture Drawing Submitted and Approved</p> <p>TSI.6.4 - PCB Test Fixture Fabricated</p> <p>TSI.6.5 - Firmware Testing Board Delivered</p>	<p>Xiaonan: TSI PCB Populated and Tested</p> <p>Tianyu: TSI.2.4 - High Voltage Mounting Plate Drawing Approved and Submitted to Machine Shop</p> <p>TSI.2.1 - 2D Enclosure Designed, Approved, and Submitted to Machine Shop</p> <p>TSI.5.3 - IMD Purchased and Acquired</p> <p>Yuqiu: TSI.7.1 - TSI and MCS Connected</p> <p>TSI.7.2 - TSI and Test Panel Connected</p> <p>TSI.7.3 - TSI and GLV Connected</p> <p>TSI.7.5 - TSI and SCADA Connected</p>	none	<p>Tianyu: TSI.5.3 - IMD Purchased and Acquired</p> <p>TSI.2.4 - High Voltage Mounting Plate Approved and Submitted to Machine Shop</p>
TSV	Sam:	Alex:	none	Weston:

	<p>TSV.3.9 - First PackMan PCB Populated and Tested</p> <p>Alex: High Voltage Indicator Circuit Schematic Complete</p> <p>Antonio: Laser cut High Voltage Present / Testing Box</p> <p>Robson: Literature review of State of Charge Algorithms</p> <p>Studied Kalman filter and its association with in State of Charge Algorithms</p>	<p>High Voltage Indicator Circuit Layout Complete and Approved</p> <p>Robson: TSV.8.9 - Implement State of Charge Algorithm</p> <p>TSV.8.10 - Incorporate Cell Characterization with SOC Algorithm</p> <p>Weston: TSV.5.9 - High Voltage / Testing in Progress Signs Designed and Manufactured</p> <p>TSV.5.9 - High Voltage / Testing in Progress Signs Acquired and Installed</p> <p>Yishak: TSV.1.8 - CellMan Populated</p> <p>TSV.6.2 - A high-level block diagram of the battery packs (with wiring)</p> <p>TSV.2.3 - SegMan PCB Parts List Purchase Order Approved and Submitted</p> <p>Zian: TSV.9.2 - Firmware Logic / State Machine Delivered and Approved</p> <p>TSV.9.3 - Firmware I/O Functionality Delivered</p>		<p>TSV.4.6 - Cell Connecting Bar Designs</p> <p>Alex: High Voltage Indicator Circuit Layout Complete and Approved</p>
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Cooling	none	Weston: COOL.1.1 - Cooling Enclosure	none	Weston: COOL.1.1 - Cooling Enclosure
Interconnect	Drew: Cockpit Panel Manufactured	Drew: Cockpit Panel Installed	none	Drew: INT.2.2 - Full wiring purchase order submitted
Mech	none	Hayden: PART.6.9 - Motor Controller Configured	Hayden: Dyno motor mount and shaft redesign	none
Management	none	Alex: M.1.5 - Design Report M.1.6 - Sustainability Report M.2.3 - ATP Submitted for Review Katie: M.1.4 - Electrical Systems Form M.2.3 - ATP Submitted for Review Hayden: Resolve Motor Controller Issue M.1.4 - Electrical Systems Form	none	Alex: M.2.3 - ATP Submitted for Review Katie: M.1.4 - Electrical Systems Form M.2.3 - ATP Submitted for Review

Purchasing Summary from Previous Week:

★ Chassis/Body includes what we have spent plus what we have committed to spending.

Sub-system	Previously Allocated Budget	Total Spent	Budget Remaining	Percentage Spent
Brakes	\$3,500.00	\$0.00	\$3,500.00	0.00%
Chassis/Body	\$5,000.00	\$11,000.00	-\$6,000.00	220.00%
Cooling	\$620.00	\$37.64	\$582.36	6.07%
Drivetrain	\$0.00	\$2,175.00	-\$2,175.00	
GLV	\$780.00	\$1,143.52	-\$363.52	146.61%
Interconnect	\$1,500.00	\$1,367.78	\$132.22	91.19%
Motor/MCS	\$4,000.00	\$6,781.02	-\$2,781.02	169.53%
Pedal/Controls	\$2,000.00	\$0.00	\$2,000.00	0.00%
Steering	\$2,500.00	\$1,840.34	\$659.66	73.61%
Suspension	\$2,200.00	\$0.00	\$2,200.00	0.00%
TSI	\$1,500.00	\$2,737.73	-\$1,237.73	182.52%
TSV	\$4,187.00	\$3,842.04	\$344.96	91.76%
VSCADA / DYNO	\$525.00	\$299.05	\$225.95	56.96%
Shipping/Tax	\$4,246.80	\$1,258.93	\$2,987.87	29.64%
Registration	\$2,300.00	\$2,300.00	\$0.00	100.00%
Overall	\$34,858.80	\$34,783.05	\$75.75	99.78%

Purchases from Previous Weeks:

3/15/2019						
ECE Department Material Request						
Course: ECE 491 Professor: Nadovich			Req Number: 48			
Requested By			Vendor: ADVANCED CIRCUITS			
Name: Robson Adem			Web Site: www.my5pcb.com			
Email: ademr@lafayette.edu			Phone: (866) 433-5722			
Phone: 4845919265			Ship By: Ground			
#	Quantity	Vendor Part	Description	Unit Price	Total Price	Revd
1	1	SEGMAN V1	Segment Mangement Board	\$33.00	\$33.00	
				Shipping Fees	\$23.80	
				Grand Total:	\$56.80	
Instructor Approval:						
Department Approval:						
(Over \$500)						

2018-19 PURCHASE REQUEST FORM						
Class/Project Name:	FSAE-Racecar					
Account #:						
Advisor Approval:	Nesbit/Nadovich/Nesise					
Vendor Order Information						
Date:	3/21/2019					
Web/Email Address:	https://www.mcmaster.com/					
Vendor Name:	McMaster-Carr					
Address:	200 New Canton Way					
City:	Robbinsville					
State:	NJ					
Zip Code:	8691					
Telephone:	609-689-3000					
Fax:	609-259-3575					
ORDER INFORMATION						
#	Qty	Unit	Part #	Description	Unit Price	Price
1	2	Bar	7779731	3/8" x 1/8" x 6' Low-Carbon Steel U-Channels	\$20.07	\$40.14
2	6	Cloth	9245754	1" x 1" x 0.063" Easy-to-Form Galvanized Steel Wire Cloth, 60" Wide 6' Long	\$4.05	\$24.30
3	4	Bar	9143617	1/2" x 1/2" x 6' Low-Carbon Steel Bar	\$21.57	\$86.28
4	1	Sheet	86749200	36" x 36" x 1/8" Clear Impact-Resistant Polycarbonate	\$46.41	\$46.41
5	4	Discs	58826129	1/2" x 1/2" Circular Neodymium Magnets, 18 lbf Max Pull	\$4.56	\$18.24
6	1	Pack of 100	91287A113	18-8 Stainless Steel Hex Head Screw M4 x 8.7 mm Thread, 12 mm Long	\$9.62	\$9.62
7	1	Pack of 50	91455A110	Class 18-8 Steel Washer Zinc-Aluminum Coated, M4 Screw Size, 4.3 mm ID, 9 mm OD	\$9.64	\$9.64
8	1	Bar	92460422	6061 Aluminum	\$38.66	\$38.66
					Shipping	
Total						\$273.29
Comments:						