

WBS Level	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	Fully Operational Motor	DYNO.1	Motor fully spins when power is delivered	Zian	10/28/2018		0	100	0.91	0	0
3	Added Support From VSCADA	DYNO.2	DYNO software is updated to add more functionality	Zian	11/11/2018		0	100	0.91	0	0
3	Testing Platform Prepared	DYNO.3	DYNO platform is ready for testing of integrated systems	Sam	11/25/2018		0	100	0.91	0	0
3	DYNO Test Performed	DYNO.4	DYNO platform is fully integrated and tested	Zian	11/25/2018		0	100	0.91	0	0
3	DYNO Deliverables	DYNO.5	All DYNO deliverables (Paperwork for ECE 491) completed and submitted	Sam	9/22/2018	9/22/2018	100	0.91	16.6	0.152	
4	DYNO Room Wiring Layout Delivered	DYNO.1.1		Zian	10/14/2018		25	0.227			
4	DYNO Room Wired and Demonstrated	DYNO.1.2		Zian	10/28/2018		25	0.227			
4	Motor Testing Plan Delivered	DYNO.1.3		Zian	10/21/2018		25	0.227			
4	Demonstration of Motor Functionality	DYNO.1.4		Zian	10/28/2018		25	0.227			
4	DYNO-SCADA Integration Plan Delivered	DYNO.2.1		Sam	10/21/2018		16.6	0.152			
4	DYNO-SCADA Test Plan Delivered	DYNO.2.2		Sam	10/21/2018		16.6	0.152			
4	Individual Data Acquisition Tests Performed Showing Data	DYNO.2.3		Zian	11/4/2018		16.7	0.152			
4	Demo of Power Supply Control	DYNO.2.4		Zian	11/11/2018		16.7	0.152			
4	Demo of Functional Resistance Meter Flip	DYNO.2.5		Zian	11/11/2018		16.7	0.152			
4	Demo of SCADA Collecting Data and Displaying Meaningfully to Viewer	DYNO.2.6		Sam	11/11/2018		16.7	0.152			
4	Testing Plan Delivered	DYNO.3.1		Sam	11/4/2018		14.3	0.130			
4	Integration with GLV Basic Safety Loop	DYNO.3.2		Sam	11/18/2018		14.3	0.130			
4	Integration with COOLING System	DYNO.3.3		Hongbo	11/18/2018		14.3	0.130			
4	Integration of Full GLV Safety Loop	DYNO.3.4		Robson	11/18/2018		14.3	0.130			
4	Integration with TSV	DYNO.3.5		Yishak	11/18/2018		14.3	0.130			
4	Integrated with TSI	DYNO.3.6		Tianyu	11/18/2018		14.3	0.130			
4	Demo CANBus Communication Across All Connections	DYNO.3.7		Sam	11/25/2018		14.2	0.130			
4	Verify Full System is Integrated Against Test Plan	DYNO.4.1		Zian	11/25/2018		25	0.227			
4	Demo Motor Functionality from TSV System	DYNO.4.2		Zian	11/25/2018		25	0.227			
4	Demo of SCADA Controlling Motor and Systems During Test	DYNO.4.3		Sam	11/25/2018		25	0.227			
4	Collection of Data from Tests Compiled and Delivered	DYNO.4.4		Zian	11/25/2018		25	0.227			
4	PDR Delivered to MGMT	DYNO.5.1		Sam	9/22/2018	9/22/2018	16.6	0.152	16.6	0.152	
4	CDR Delivered	DYNO.5.2		Sam			16.6	0.152			
4	User Manual Delivered	DYNO.5.3		Sam			16.7	0.152			
4	Maintenance Manual Delivered	DYNO.5.4		Zian			16.7	0.152			
4	Final Presentation Delivered	DYNO.5.5		Sam			16.7	0.152			
4	ICD Document Delivered	DYNO.5.6		Zian			16.7	0.152			

WBS Level	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	COOLING System Design Completed	COOLING.1	All COOLING system is fully researched and planned for full integration	Hongbo	10/14/2018		0	100	0.89	0	0
3	Fan Controller Algorithm	COOLING.2	Fans for COOLING system are prepared and tested with a control algorithm	Hongbo	10/28/2018		0	100	0.89	0	0
3	COOLING Safety Loop Integration	COOLING.3	Safety Loop and COOLING system integration plans and design	Hongbo	10/14/2018		0	100	0.89	0	0
3	COOLING TSI Integration	COOLING.4	COOLING system communication with SCADA designed and tested	Hongbo	11/4/2018		0	100	0.89	0	0 COOLING (2.2)
3	COOLING Communication Implemented	COOLING.5		Hongbo	11/11/2018		0	100	0.89	0	0
3	COOLING Mechanical Assembly Complete	COOLING.6	COOLING system has a complete mechanical design and integration plan	Hongbo	10/28/2018		0	100	0.89	0	0
3	COOLING Deliverables	COOLING.7	ALL COOLING deliverables (Paperwork for ECE 491) completed and submitted	Hongbo	9/22/2018	9/22/2018	100	0.89	14.3	0.128	0
3	CAR Integration	COOLING.8	All COOLING integrated with CAR	Hongbo			0	0	0	0	0 COOLING (2.9)
4	Mechanical Drawing of Mounting Delivered	COOLING.1.1		MechE	10/7/2018			33.3	0.298		
4	Block diagram of COOLING System Delivered and Approved	COOLING.1.2		Hongbo	10/14/2018			33.3	0.298		
4	Electrical Schematic Delivered and Approved	COOLING.1.3		Hongbo	10/14/2018			33.4	0.298		
4	Controller Algorithm Delivered and Approved	COOLING.2.1		Hongbo	10/21/2018			25	0.223		
4	Controller Testing Plan Submitted	COOLING.2.2		Hongbo	10/21/2018			25	0.223		
4	Controller Tested against Testing Plan	COOLING.2.3		Hongbo	10/28/2018			25	0.223		
4	Demo of Fan Controller	COOLING.2.4		Hongbo	10/28/2018			25	0.223		
4	Safety Loop Integration Plan Delivered	COOLING.3.1		Hongbo	10/14/2018			50	0.446		
4	Demo of Cooling System and Safety Loop Integration	COOLING.3.2		Hongbo	10/14/2018			50	0.446		
4	Integration Plan for COOLING-TSI	COOLING.4.1		Hongbo	11/4/2018			33.3	0.298		
4	Testing Plan for COOLING-TSI Delivered	COOLING.4.2		Hongbo	11/4/2018			33.3	0.298		
4	Demo of COOLING System Working on TSI Motor Controller	COOLING.4.3		Hongbo	11/4/2018			33.4	0.298		
4	Communication Protocol Developed and Delivered	COOLING.5.1		Hongbo	11/4/2018			25	0.223		
4	Communication Implemented Between COOLING-SCADA	COOLING.5.2		Hongbo	11/11/2018			25	0.223		
4	Communication Implemented Between COOLING-TSI	COOLING.5.3		Hongbo	11/11/2018			25	0.223		
4	Demo of Communication Capabilities	COOLING.5.4		Hongbo	11/11/2018			25	0.223		
4	Integration Plan of Cooling System Delivered	COOLING.6.1		Hongbo	10/14/2018			25	0.223		
4	System Fabricated and Assembled	COOLING.6.2		Hongbo	10/21/2018			25	0.223		
4	System Testing Plan Delivered	COOLING.6.3		Hongbo	10/28/2018			25	0.223		
4	System Tested Against Test Plan in Mechanical Assembly	COOLING.6.4		Hongbo	10/28/2018			25	0.223		
4	PDR Delivered to Management	COOLING.7.1		Hongbo	9/22/2018	9/22/2018		14.3	0.128	14.3	0.128
4	CDR Delivered	COOLING.7.2		Hongbo				14.3	0.128		
4	User Manual Delivered	COOLING.7.3		Hongbo				14.3	0.128		
4	Maintenance Manual Updated	COOLING.7.4		Hongbo				14.3	0.128		
4	Final Presentation Delivered	COOLING.7.5		Hongbo				14.3	0.128		
4	ATP Delivered	COOLING.7.6		Hongbo				14.3	0.128		
4	ICD Delivered	COOLING.7.7		Hongbo				14.2	0.128		
4	Integrated Subsystem with CAR	COOLING.8.1		Hongbo							
4	CAR Integration Testing Plan Delivered and Approved	COOLING.8.2		Hongbo							
4	System Tested Against Testing Plan	COOLING.8.3		Hongbo							

2	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	SCADA Communication Completed	SCADA.1	SCADA is capable of communication with other subsystems	Sam	11/25/2018	9/27/2018	100	0.89	40	0.357	
3	SCADA Software Designed and Implemented	SCADA.2	SCADA software is fully implemented with all modules tested	Sam	10/21/2018	9/22/2018	100	0.89	0	0	
3	Testing and Demonstrations	SCADA.3	SCADA software has a testing plan implemented	Zian	10/14/2018	0	100	0.89	0	0	
3	SCADA User Interfaces Completed	SCADA.4	SCADA software is usable and has a user interface meeting project needs	Zian	10/21/2018	0	100	0.89	0	0	SCADA (2.3)
3	SCADA Recording and Outputting Data	SCADA.5	SCADA software capable of recording data and writing it to a file	Sam	10/21/2018	0	100	0.89	0	0	
3	Subsystem Integration	SCADA.6	SCADA integrated and tested and able to communicate with all subsystem Yuqiu	Sam	11/25/2018	0	100	0.89	0	0	
3	SCADA Deliverables	SCADA.7	All SCADA deliverables (Paperwork for ECE 491) completed and delivered	Sam	9/22/2018	9/22/2018	100	0.89	12.5	0.1116071429	
3	CAR Integration	SCADA.8	All SCADA Integrated with CAR	Sam	0	0	100	0.78	0	0	SCADA(2.10)
4	Set up CAN Network	SCADA.1.1		Yuqiu	9/30/2018	9/27/2018	20	0.179	20	0.179	changed from set up server
4	Setup Database Handler and Fill with Dummy Data	SCADA.1.2		Sam	9/26/2018	9/26/2018	20	0.179	20	0.179	
4	Setup and Demo Communication of CAN Network	SCADA.1.3		Yuqiu	10/7/2018		20	0.179			
4	Demo I2C Communication for GLV	SCADA.1.4		Yuqiu	11/25/2018		20	0.179			
4	Delivered Dummy Sensor Data to Database	SCADA.1.5		Sam	10/7/2018		20	0.179			delivered data to where?
4	Software Block Diagram Delivered	SCADA.2.1		Sam	9/22/2018	9/22/2018	12.5	0.112	12.5	0.112	
4	SCADA skeleton Delivered	SCADA.2.2	Basic framework of SCADA that can interface with other subsystems	Sam	10/7/2018		12.5	0.112			
4	Demo of Data Read from Sensors	SCADA.2.3		Sam	10/14/2018		12.5	0.112			
4	Raw and Calibrated Data Written to File	SCADA.2.4		Sam	10/14/2018		12.5	0.112			
4	Communication Protocols Delivered	SCADA.2.5		Sam	10/14/2018		12.5	0.112			
4	Set Up Cross-Compilation Platform	SCADA.2.6		Sam	10/21/2018		12.5	0.112			
4	Testing Plan Delivered	SCADA.2.7		Sam	10/21/2018		12.5	0.112			
4	Testing Plan Performed and Verified	SCADA.2.8		Sam	10/21/2018		12.5	0.112			
4	Full Testing Plan Delivered and Accepted	SCADA.3.1		Zian	10/7/2018		14.3	0.128			
4	Demo of CANBus Link Passing Data on All Channels	SCADA.3.2		Yuqiu	10/7/2018		14.3	0.128			
4	Demo Soft Throttle on DYNO	SCADA.3.3		Zian			14.3	0.128			
4	Demo of Cell Communication and Data Acquisition	SCADA.3.4		Yuqiu			14.3	0.128			
4	Demonstration of all Uis Displaying Useful Data	SCADA.3.5		Zian			14.3	0.128			
4	Demo of Sleep Mode	SCADA.3.6	Mode when car is not running, SCADA samples data at a slower rate	Zian	10/14/2018		14.3	0.128			
4	Demo of SCADA Interacting with Subsystems	SCADA.3.7		Yuqiu			14.2	0.128			
4	Block Diagram of Uis Delivered	SCADA.4.1		Zian	10/7/2018		16.6	0.149			
4	Back Display Designed and Delivered	SCADA.4.2		Zian	9/30/2018		16.6	0.149			
4	Dashboard Interface Designed and Delivered	SCADA.4.3		Zian	10/7/2018		16.7	0.149			
4	Demo of Back Display	SCADA.4.4		Zian	10/14/2018		16.7	0.149			
4	Demo of UI Displaying Received Data	SCADA.4.5		Zian	10/14/2018		16.7	0.149			
4	Demo of Dashboard Interface	SCADA.4.6		Zian	10/21/2018		16.7	0.149			
4	Demo of Transitions between Vehicle States	SCADA.5.1		Sam	10/14/2018		20	0.128			How do we know it's configured/completed? is SCADA getting hardware or software signals?
4	Config/Setup for Sensors Delivered	SCADA.5.2		Sam	10/21/2018		20	0.179			
4	Demo of Receiving Raw Data and Writing to a File	SCADA.5.3		Sam	10/7/2018		20	0.179			
4	Demo of Calibrated Data Being Written to a File	SCADA.5.4		Sam	10/7/2018		20	0.179			
4	Demo of System Reaction of Data (Blink LED, etc)	SCADA.5.5		Sam	10/21/2018		20	0.179			
4	Integration Plan Delivered	SCADA.6.1		Yuqiu	10/21/2018		20	0.179			
4	Demo of GLV Integration	SCADA.6.2		Yuqiu	11/25/2018		20	0.179			
4	Demo of TSI Integration	SCADA.6.3		Yuqiu	11/25/2018		20	0.179			
4	Demo of TSV Integration	SCADA.6.4		Yuqiu	11/25/2018		20	0.179			
4	Demo of COOLING Integration	SCADA.6.5		Yuqiu	11/25/2018		20	0.179			
4	ATP Delivery	SCADA.7.1		Sam			12.5	0.112			
4	PDR Delivered to Mgmt.	SCADA.7.2		Sam	9/22/2018	9/22/2018	12.5	0.112	12.5	0.112	
4	Maintainability Plan Delivered	SCADA.7.3		Sam			12.5	0.112			
4	CDR Delivered	SCADA.7.4		Sam			12.5	0.112			
4	User Manual Delivered	SCADA.7.5		Sam			12.5	0.112			
4	Final Poster Delivered	SCADA.7.6		Sam			12.5	0.112			
4	Final Presentation Delivered	SCADA.7.7		Sam			12.5	0.112			
4	ICD Document Delivered	SCADA.7.8		Zian			12.5	0.112			
4	Integrated Subsystem with CAR	SCADA.8.1		Sam			33.3	0.298			
4	CAR Integration Testing Plan Delivered and Approved	SCADA.8.2		Sam			33.3	0.298			
4	System Tested Against Testing Plan	SCADA.8.3		Sam			33.4	0.298			

2.4	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	New TSI/MCS Enclosure Built and Delivered	TSI.1		Xiaonan	11/11/2018		0	100	0.78	0	0
3	TSI Board Delivered	TSI.2		Xiaonan	11/4/2018		0	100	0.78	0	0
3	IMD Board Delivered	TSI.3		Tianyu	11/4/2018		0	100	0.78	0	0
3	TSI Firmware Delivered	TSI.4		Hongbo	11/4/2018		0	100	0.78	0	0
3	MCS Incorporated into TSI Enclosure	TSI.5		Antonio	11/18/2018		0	100	0.78	0	0
3	COOLING System Integrated into TSI	TSI.6		Hongbo	11/4/2018		0	100	0.78	0	0
3	Pedal Cluster Electronics	TSI.7		Antonio	10/7/2018		0	100	1.5	0	0
3	TSI Demonstrated and Accepted	TSI.8	Demonstrated TSI is rules c	Tianyu	11/18/2018		0	100	0.78	0	0
3	TSI Deliverables	TSI.9	All TSI deliverables (Paperw	Antonio	9/22/2018	9/22/2018	100	0.78	12.5	0.098	
3	CAR Integration	TSI.10	All TSI Integrated with CAR	Xiaonan			0	0	0	0	0
4	Mechanical Drawing of TSI Enclosure Delivered and Approved	TSI.1.1		Antonio	10/7/2018			33.3	0.260		
4	New TSI Enclosure Fabricated	TSI.1.2		Tianyu	10/21/2018			33.3	0.260		
4	New Enclosure Populated and Checked for Rule Compliance	TSI.1.3		Tianyu	11/11/2018			33.4	0.260		
4	TSI Block Diagram Delivered and Approved	TSI.2.1		Xiaonan	10/7/2018			14.3	0.112		
4	TSI Circuit Schematic Delivered and Approved	TSI.2.2		Xiaonan	10/14/2018			14.3	0.112		
4	TSI PCB Layout Complete and Approved	TSI.2.3		Xiaonan	10/14/18			14.3	0.112		
4	TSI Purchased and Delivered	TSI.2.4		Xiaonan	10/21/2018			14.3	0.112		
4	TSI PCB Populated and Verified	TSI.2.5		Xiaonan	10/28/2018			14.3	0.112		
4	TSI Testing Plan Delivered	TSI.2.6		Xiaonan	10/28/2018			14.3	0.112		
4	TSI PCB Debugged	TSI.2.7		Xiaonan	11/4/2018			14.2	0.112		
4	IMD Purchase Order Submitted and Verified	TSI.3.1		Tianyu	10/7/2018			25	0.195		
4	IMD Integrated with TSI Board	TSI.3.2		Tianyu	11/4/2018			25	0.195		
4	IMD Testing Plan Delivered	TSI.3.4		Tianyu	10/7/2018			25	0.195		
4	IMD Board Debugged	TSI.3.5		Tianyu	11/4/2018			25	0.195		
4	Firmware Block Diagram Delivered and Approved	TSI.4.1		Yuqiu	10/7/2018			8.33	0.065		
4	2018 Firmware Bugs Discovered and Fixed	TSI.4.2		Hongbo	10/7/2018			8.33	0.065		
4	Firmware Testing Board Delivered	TSI.4.3		Hongbo	10/7/2018			8.33	0.065		
4	Firmware I/O Functionality Delivered	TSI.4.4		Hongbo	10/21/2018			8.33	0.065		
4	Firmware Logic / State machine Delivered and Approved	TSI.4.5		Hongbo	10/21/2018			8.33	0.065		
4	Firmware Tested using Testing Board	TSI.4.6		Hongbo	10/28/2018			8.33	0.065		
4	Firmware Integration Testing Complete	TSI.4.7		Hongbo	10/7/2018			8.33	0.065		
4	VSCADA Communication CANBus Communication Complete	TSI.4.8		Hongbo	10/28/2018			8.33	0.065		
4	VSCADA GPIO Communication Complete	TSI.4.9		Hongbo	10/28/2018			8.34	0.065		
4	CANBus Purchased	TSI.4.10		Hongbo	10/7/2018			8.34	0.065		
4	CANBus / TSI Integration Complete	TSI.4.11		Hongbo	11/4/2018			8.34	0.065		
4	CANBus Integration Testing Plan Delivered	TSI.4.12		Hongbo	11/4/2018			8.34	0.065		
4	MCS Installed in TSI Enclosure	TSI.5.1		Antonio	11/11/2018			20	0.156		
4	MCS Integration Testing Plan Delivered and Accepted	TSI.5.2		Antonio	11/4/2018			20	0.156		
4	Demo of MCS Rule Compliance In TSI Enclosure	TSI.5.3		Antonio	11/11/2018			20	0.156		
4	MCS COOLING Integration	TSI.5.4		Antonio	11/11/2018			20	0.156		
4	MCS Verified against Integration Testing Plan	TSI.5.5		Antonio	11/18/2018			20	0.156		
4	COOLING System Integration Plan Delivered and Accepted	TSI.6.1		Hongbo	10/14/2018			25	0.195		
4	COOLING System Integrated with TSI and Verified	TSI.6.2		Hongbo	11/4/2018			25	0.195		
4	COOLING System Test Plan Delivered and Accepted	TSI.6.3		Hongbo	10/21/2018			25	0.195		
4	COOLING System Tested Against Testing Plan	TSI.6.4		Hongbo	11/4/2018			25	0.195		
4	Verify and Correct 2018 Block and Wiring Diagram	TSI.7.1	Pedal Wiring Diagram	Antonio	10/7/2018			16.6	0.250		
4	Block Diagram and Wiring Plan Delivered	TSI.7.2		Antonio	10/7/2018			16.6	0.250		
4	Throttle Connected	TSI.7.3		Antonio				16.7	0.250		
4	Brake Connected and Integrated into Safety Loop	TSI.7.4		Antonio				16.7	0.250		
4	Brake Light Connected and Reacts to Brake	TSI.7.5		Antonio				16.7	0.250		
4	Demo Pedal Electronics Communicating with SCADA	TSI.7.6		Antonio				16.7	0.250		
4	Demonstration of High/Low Voltage Isolation on TSI	TSI.8.1		Tianyu	11/11/2018			14.3	0.112		
4	Demonstration of CANBus communication on TSI	TSI.8.2		Tianyu	11/11/2018			14.3	0.112		
4	Demonstration of Previous TSI Errata Incorporation	TSI.8.3		Tianyu	10/7/2018			14.3	0.112		
4	Demonstration of TSI Low Voltage Systems	TSI.8.4		Tianyu	11/18/2018			14.3	0.112		
4	Demonstration of TSI High Voltage Systems	TSI.8.5		Tianyu	11/18/2018			14.3	0.112		
4	Demonstration of TSI Location Meeting Rule Compliance	TSI.8.6		Tianyu	11/18/2018			14.3	0.112		
4	Demonstration of Safety Loop Integration	TSI.8.7		Tianyu	11/18/2018			14.2	0.112		
4	PDR Delivered to MGMT	TSI.9.1		Antonio	9/22/2018	9/22/2018		12.5	0.098	12.5	0.098
4	ATP Delivered to MGMT	TSI.9.2		Antonio				12.5	0.098		
4	CDR Delivered	TSI.9.3		Antonio				12.5	0.098		
4	User Manual Delivered	TSI.9.4		Antonio				12.5	0.098		
4	Maintenance Manual Delivered	TSI.9.5		Antonio				12.5	0.098		
4	Final Presentation Delivered	TSI.9.6		Antonio				12.5	0.098		
4	ESF Form Delivered	TSI.9.7		Antonio				12.5	0.098		
4	ICD Document Delivered	TSI.9.8		Antonio				12.5	0.098		
4	Implemented Fully Functional TSI	TSI.10.1		Xiaonan							
4	CAR Integration Testing Plan Delivered and Approved	TSI.10.2		Xiaonan							
4	System Tested Against Testing Plan	TSI.10.3		Xiaonan							
4	Throttle Calibrated to Work with Physical Pedals	TSI.10.4		Xiaonan							
4	Enclosure Mounted in CAR	TSI.10.5		Xiaonan							

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3	GLV Safety Loop	GLV.1	GLV Safety Loop is designed and implemented into the system	Max	11/18/2018		0	50	0.69	0	0
3	GLV PCB Complete	GLV.2	GLV Circuit delivered	Robson	11/4/2018	9/30/2018	100	100	0.69	30	0.208
3	GLV Installed and Integrated	GLV.3	GLV provides power to other subsystems	Max	9/30/18		0	100	0.69	0	0
3	Side Panels Complete	GLV.4		Robson	10/21/2018		0	100	0.69	0	0
3	Dashboard Electronics Complete	GLV.5		Sam	10/21/2018		0	100	0.69	0	0
3	GLV Battery Installed	GLV.6		Robson	11/25/2018		0	100	0.69	0	0
3	Pi2CAN GPIO Board Complete	GLV.7	Board to free up GPIO Pins designed and fabricated	Max	10/21/2018		0	100	0.69	0	0
3	GLV BoB Mount Complete	GLV.8		Max	10/28/2018		0	1000	1.04		
3	GLV Deliverables	GLV.9	All GLV deliverables (Paperwork for ECE 491) completed and delivered	Robson	9/22/2018	9/22/2018	100	0.69		12.5	0.077
3	CAR Integration	GLV.10		Robson	11/25/2018		0	0		0	0
4	Safety Loop Block Diagram Delivered	GLV.1.1		Max	10/14/2018		25	0.174			
4	Safety Loop Integration Plan Delivered	GLV.1.2		Max	10/14/2018		25	0.174			
4	Safety Loop Constructed and Demonstrated	GLV.1.3		Max	11/18/2018		25	0.174			
4	Demonstration of Rules Compliance	GLV.1.4		Max	11/18/2018		25	0.174			
4	GLV Block Diagram Delivered	GLV.2.1		Robson	9/30/2018	9/30/2018	10	0.069		10	0.069
4	GLV Circuit Schematic Delivered	GLV.2.2		Robson	9/30/2018	9/30/2018	10	0.069		10	0.069
4	GLV PCB Layout Delivered	GLV.2.3		Robson	10/14/2018		10	0.069			
4	GLV Board BOM Approved	GLV.2.4		Robson	9/30/2018	9/30/2018	10	0.069		10	0.069
4	GLV PCB Ordered and Delivered	GLV.2.5		Robson	10/14/2018		10	0.069			
4	GLV PCB Populated and Verified	GLV.2.6		Robson	10/21/2018		10	0.069			
4	GLV Board Testing Plan Delivered	GLV.2.7		Robson	10/21/2018		10	0.069			
4	GLV Board Debugged and Tested	GLV.2.8		Robson	10/28/2018		10	0.069			
4	GLV PCB Test Fixture Delivered	GLV.2.9		Robson	10/28/2018		10	0.069			
4	Demonstration of GLV Board	GLV.2.10		Robson	11/4/2018		10	0.069			
4	GLV Enclosure Mechanical Drawing Delivered	GLV.3.1		Max	9/30/18		14.3	0.099			
4	GLV Board Installed in Enclosure	GLV.3.2	All wiring connecting GLV to box parts completed	Max			14.3	0.099			
4	GLV Enclosure Installed on Car	GLV.3.3		Max			14.3	0.099			
4	GLV Dashboard Display Installed	GLV.3.4		Max			14.3	0.099			
4	GLV Dash Display Tested and Approved	GLV.3.5		Max			14.3	0.099			
4	GLV Supplying Power to TSI	GLV.3.6		Max			14.3	0.099			
4	GLV Supplying Power to PackMans	GLV.3.7		Max			14.2	0.099			
4	Block Diagram of Side Panels Delivered	GLV.4.1		Robson	10/21/2018		12.5	0.087			
4	Left Side Panel BRB Installed and Tested	GLV.4.2		Robson	10/21/2018		12.5	0.087			
4	Left Side Panel Safety Loop Integration	GLV.4.3		Robson	10/21/2018		12.5	0.087			
4	Right Side Panel BRB Installed and Tested	GLV.4.4		Max	10/21/2018		12.5	0.087			
4	Right Side Panel and MReset Installed and Tested	GLV.4.5		Max	10/21/2018		12.5	0.087			
4	Right Side Panel GLVMS Installed and Tested	GLV.4.6		Robson	10/21/2018		12.5	0.087			
4	Right Side Panel TSMS Installed and Tested	GLV.4.7		Robson	10/21/2018		12.5	0.087			
4	Right Side Panel Safety Loop Integration	GLV.4.8		Robson	10/21/2018		12.5	0.087			
4	Block Diagram Delivered	GLV.5.1		Sam	10/21/2018		33.3	0.231			
4	Dashboard Installed	GLV.5.2		Sam	10/21/2018		33.3	0.231			
4	Demo of Dashboard Displaying Desired Data to Driver	GLV.5.3		Sam	10/21/2018		33.4	0.231			
4	GLV Battery Installed on Car and connected to GLV	GLV.6.1		Robson	11/25/2018		25	0.174			
4	Demo of GLV Running Off Battery Power	GLV.6.2		Robson	11/25/2018		25	0.174			
4	Battery Charing System Documented	GLV.6.3		Robson	11/25/2018		25	0.174			
4	Battery Enclosure Mechanical Design	GLV.6.4		Max	11/25/2018		25	0.174			
4	Pi2CAN GPIO Board Block Diagram Delivered	GLV.7.1		Max	10/7/2018		11.1	0.077			
4	Pi2CAN GPIO Board Circuit Schematic Delivered	GLV.7.2		Max	10/7/2018		11.1	0.077			
4	Pi2CAN GPIO Board PCB Layout Delivered	GLV.7.3		Max	10/7/2018		11.1	0.077			
4	Pi2CAN GPIO Board BOM Approved	GLV.7.4		Max	10/7/2018		11.1	0.077			
4	Pi2CAN GPIO Board PCB Ordered and Delivered	GLV.7.5		Max	10/14/2018		11.1	0.077			
4	Pi2CAN GPIO Board PCB Populated and Verified	GLV.7.6		Max	10/14/2018		11.1	0.077			
4	Pi2CAN GPIO Board Board Testing Plan Delivered	GLV.7.7		Max	10/14/2018		11.1	0.077			
4	Pi2CAN GPIO Board Board Debugged and Tested	GLV.7.8		Max	10/21/2018		11.1	0.077			
4	Demonstration of Pi2CAN GPIO Board	GLV.7.9		Max	10/21/2018		11.2	0.077			
4	GLV BoB Mount Block Diagram Delivered	GLV.8.1		Max	10/14/2018		100	0.069			
4	GLV BoB Mount Schematic Delivered	GLV.8.2		Max	10/14/2018		100	0.069			
4	GLV BoB Mount Layout Delivered	GLV.8.3		Max	10/14/2018		100	0.069			
4	GLV BoB Mount BOM Approved	GLV.8.4		Max	10/14/2018		100	0.069			
4	GLV BoB Mount Ordered and Delivered	GLV.8.5		Max	10/14/2018		100	0.069			
4	GLV BoB Mount Populated and Verified	GLV.8.6		Max	10/21/2018		100	0.069			
4	GLV BoB Mount Testing Plan Delivered	GLV.8.7		Robson	10/21/2018		100	0.069			
4	GLV BoB Mount Debugged and Tested	GLV.8.8		Robson	10/21/2018		100	0.069			
4	GLV BoB Mount Test Fixture Delivered	GLV.8.9		Robson	10/21/2018		100	0.069			
4	Demonstration of GLV BoB Mount	GLV.8.10		Robson	10/28/2018		100	0.069			
4	PDR Delivered to MGMT	GLV.9.1		Robson	9/22/2018	9/22/2018	12.5	0.077		12.5	0.077
4	ATP Delivered to MGMT	GLV.9.2		Robson			12.5	0.077			
4	CDR Delivered	GLV.9.3		Robson			12.5	0.077			
4	User Manual Delivered	GLV.9.4		Robson			12.5	0.077			
4	Maintenance Manual Delivered	GLV.9.5		Robson			12.5	0.077			
4	Final Presentation Delivered	GLV.9.6		Robson			12.5	0.077			
4	ESF Form Delivered	GLV.9.7		Robson			12.5	0.077			
4	ICD Document Delivered	GLV.9.8		Robson			12.5	0.077			
4	Battery Enclosure Fabricated and Mounted	GLV.10.1		Robson	11/25/2018						
4	GLV Integrated with VCI	GLV.10.2		Robson	11/25/2018						
4	GLV-VCI Integration Testing Plan Delivered and Approved	GLV.10.3		Robson	11/25/2018						
4	GLV-VCI System Tested Against Testing Plan	GLV.10.4		Robson	11/25/2018						
4	Safety Loop Plan Delivered and Approved	GLV.10.5		Robson	11/25/2018						
4	Safety Loop Tested Against Testing Plan	GLV.10.6		Robson	11/25/2018						

	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	TSV Pack Redesign Delivered	TSV.1	Mechanical Drawing, Schematic, and Delivered Physical Pack	MechE	11/18/2018		100	1.04	0	0	
3	TSV Packs Rule Compliance	TSV.2	All pieces of the TSV packs are compliant with the Formula Electric rules	Weston	11/18/2018		100	1.04	0	0	
3	CellMen Board Redesign Delivered	TSV.3	CellMen Boards designed, fabricated, and tested	Yishak	11/4/2018		100	1.04	0	0	
3	PackMan Boards Delivered	TSV.4	PackMan boards are designed, fabricated, and tested	Max	10/28/2018		100	1.04	0	0	
3	ChargeMan Boards Delivered	TSV.5	ChargeMan boards designed, fabricated, and tested		11/4/2018		100	1.04			
	State of Charge Algorithm Delivered	TSV.6			10/28/2018		100				TSV (2.6)
3	Demonstrated and Accepted	TSV.7	All components of the TSV are demonstrated as functional	Weston	11/25/2018		100	1.04	0	0	
	Manager Communication	TSV.8			11/25/2018		100				
	Assorted Weird Shit	TSV.9			9/22/2018		100				
3	TSV Deliverables	TSV.10	All TSV deliverables (Paperwork for ECE 491) completed and submitted	Yishak	9/22/2018		100	1.04	12.5	0.174	
3	CAR Integration	TSV.11	All TSV Integrated with CAR	Hayden			0	0	0	0	TSV(2.13)
	Pack High Level Electrical Block Diagram Delivered and Accepted	TSV.1.1	Includes Wiring Diagram	Yishak	10/14/2018		11.1				
4	Pack Mechanical Drawing Submitted and Accepted	TSV.1.2		Brian	10/14/2018		11.1	0.130			
4	Pack 1 Enclosure Fabricated	TSV.1.3		Brian	10/28/2018		11.1	0.130			
4	Pack 2 Enclosure Fabricated	TSV.1.4		Brian	10/28/2018		11.1	0.130			
4	Pack Testing Plan Submitted and Approved	TSV.1.5		Brian	10/28/2018		11.1	0.130			
4	Pack 1 Populated and Verified with Testing Plan	TSV.1.6		Brian	11/11/2018		11.1	0.130			
4	Pack 2 Populated and Verified with Testing Plan	TSV.1.7		Brian	11/11/2018		11.1	0.130			
4	Demo of Pack 1 Functionality with Testing Plan	TSV.1.8		Weston	11/18/2018		11.1	0.130			
4	Demo of Pack 2 Functionality with Testing Plan	TSV.1.9		Weston	11/18/2018		11.2	0.130			
4	Demo of Complete Electrical Isolation of Packs	TSV.2.1		Weston	11/18/2018		50	0.521			
4	Demo of Pack Rule Compliance	TSV.2.2		Weston	11/18/2018		50	0.521			
4	CellMen Block Diagram Delivered and Approved	TSV.3.1		Yishak	9/30/2018		12.5	0.130			
4	CellMen Circuit Schematic Delivered and Approved	TSV.3.2		Yishak	10/7/2018		12.5	0.130			
4	CellMen PCB Layout Complete and Approved	TSV.3.3		Yishak	10/14/2018		12.5	0.130			
4	CellMen Purchased and Delivered	TSV.3.4		Yishak	10/14/2018		12.5	0.130			
4	CellMen Boards Populated and Verified	TSV.3.5		Yishak	10/21/2018		12.5	0.130			
4	1st CellMen Board Debugged and Tested	TSV.3.6		Yishak	10/28/2018		12.5	0.130			
4	CellMen Testing Plan Delivered	TSV.3.7		Yishak	10/21/2018		12.5	0.130			
4	CellMen Boards Debugged and Tested	TSV.3.8		Yishak	11/4/2018		12.5	0.130			
4	PackMan Block Diagram Delivered and Approved	TSV.4.1		Hayden	10/7/2018		14.3	0.149			
4	PackMan Circuit Schematic Delivered and Approved	TSV.4.2		Hayden	10/7/2018		14.3	0.149			
4	PackMan PCB Layout Complete and Approved	TSV.4.3		Hayden	10/14/2018		14.3	0.149			
4	PackMan Purchased and Delivered	TSV.4.4		Hayden	10/14/2018		14.3	0.149			
4	PackMan Populated and Verified	TSV.4.5		Hayden	10/21/2018		14.3	0.149			
4	PackMan Testing Plan Delivered	TSV.4.6		Hayden	10/21/2018		14.3	0.149			
4	PackMan Boards Debugged and Tested	TSV.4.7		Hayden	10/28/2018		14.2	0.149			
4	ChargeMan Block Diagram Delivered and Approved	TSV.5.1		Max	10/14/2018		14.3	0.149			
4	ChargeMan Circuit Schematic Delivered and Approved	TSV.5.2		Max	10/14/2018		14.3	0.174			
4	ChargeMan PCB Layout Complete and Approved	TSV.5.3		Max	10/21/2018		14.3	0.174			
4	ChargeMan Purchased and Delivered	TSV.5.4		Max	10/21/2018		14.3	0.174			
4	ChargeMan Populated and Verified	TSV.5.5		Max	10/28/2018		14.3	0.174			
4	ChargeMan Testing Plan Delivered	TSV.5.6		Max	10/28/2018		14.3	0.174			
4	ChargeMan Boards Debugged and Tested	TSV.5.7		Max	11/4/2018		14.2	0.174			
4	Pseudo Code for Algorithm Delivered	TSV.6.1	State of Charge Papers read and researched	Clement	10/14/2018		20				
4	Testing Plan for SOC Algorithm Delivered and Approved	TSV.6.2	Determine if Algorithm will work	Clement	10/21/2018		20				
4	SOC Algorithm Implemented and Verified	TSV.6.3		Clement	10/21/2018		20				
4	Testing Plan for SOC-CellMan Integration Delivered and Approved	TSV.6.4		Clement	10/28/2018		20				
4	SOC-CellMan Verified Against Testing Plan	TSV.6.5		Clement	10/28/2018		20				
4	Pseudo Code for Communication Algorithm Delivered	TSV.7.1			10/14/2018		33.3				
4	Testing Plan for Comms Algorithm Delivered and Approved	TSV.7.2			10/14/2018		33.3				
4	Comms Algorithm Implemented and Verified	TSV.7.3			10/21/2018		33.4				
4	Full Testing Plan Delivered	TSV.8.1		Weston	11/25/2018		14.29	0.047			
4	Demo of Pack 1 Supplying Desired Voltage	TSV.8.2		Weston	11/25/2018		14.29	0.047			
4	Demo of Pack 2 Supplying Desired Voltage	TSV.8.3		Weston	11/25/2018		14.29	0.047			
4	Demo of Full System Voltage Supplied by Packs	TSV.8.4		Weston	11/25/2018		14.29	0.047			
4	Demo of TSV Safety Loop Integration	TSV.8.5		Weston	11/25/2018		14.28	0.047			
4	Demo of CellMen Cell Monitoring Using Test Plan	TSV.8.6		Weston	11/25/2018		14.28	0.047			
4	Demo of PackMan Boards According to Test Plan	TSV.8.7		Weston	11/25/2018		14.28	0.047			
4	PDR Delivered	TSV.9.1		Yishak	9/22/2018	9/22/2018	12.5	0.174	12.5	0.174	
4	ATP Delivered	TSV.9.2		Yishak			12.5	0.174			
4	CDR Delivered	TSV.9.3		Yishak			12.5	0.174			
4	User Manual Delivered	TSV.9.4		Yishak			12.5	0.174			
4	Maintenance Manual Delivered	TSV.9.5		Yishak			12.5	0.174			
4	Final Presentation Delivered	TSV.9.6		Yishak			12.5	0.174			
4	ESF Form Delivered	TSV.9.7		Yishak			12.5	0.174			
4	ICD Document Delivered	TSV.9.8		Yishak			12.5	0.174			
4	Integrated Subsystem with CAR	TSV.10.1		Hayden			33.3				
4	CAR Integration Testing Plan Delivered and Approved	TSV.10.2		Hayden			33.3				
4	System Tested Against Testing Plan	TSV.10.3		Hayden			33.4				

WBS Level	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	Wiring Layout Delivered	INTER.1	Wiring of car is planned and designed for easy access for any potential need	Weston	10/21/2018	12/30/1899	100	1.04	0	0	
3	I/O Layout Delivered	INTER.2	All necessary I/O are available and layed out for complete integration	Drew	10/28/2018		0	1.04	0	0	
3	Rule Compliant Wiring	INTER.3	All wiring for system meet all requirements set forth for the Formula Electric competition	Weston	11/4/2018		0	1.04	0	0	
3	DYNO Wired	INTER.4		Weston	11/25/2018		0	1.04	0	0	INTERCONNECT (2.7)
3	Car Wired	INTER.5		Drew		0	0	1.04	0	0	
3	Wire Tester Constructed	INTER.6	Produced a wire testing box capable of testing 4 and 6 pin DT cables	Drew	10/14/2018	12/30/1899	100	1.04			
3	INTERCONNECT Deliverables	INTER.7	All INTERCONNECT deliverables (Paperwork for ECE 491) completed and submitted	Weston	9/22/2018	9/22/2018	100	1.04	14.3	0.1488095238	
4	Wiring BOM Delivered and Approved	INTER.1.1		Weston	10/21/2018		12.5	0.130			
4	Wiring BOM Ordered and Delivered	INTER.1.2		Weston	10/21/2018		12.5	0.130			
4	Incorporation of Previous Errata in Diagram	INTER.1.3		Drew	9/30/2018		12.5	0.130			
4	Cable Naming Scheme Delivered and Approved	INTER.1.4		Drew	10/7/2018		12.5	0.130			
4	Cable Organization Plan Delivered and Approved	INTER.1.5	Specify how cables will be grouped together	Drew	10/7/2018		12.5	0.130			
4	Wiring Diagram Updated and Delivered	INTER.1.6		Weston	10/14/2018		12.5	0.130			
4	Wiring Diagram Printed and Posted in AEC 400	INTER.1.7		Weston	10/14/2018		12.5	0.130			
4	Wiring Diagram Printed and Posted in AEC 134	INTER.1.8		Weston	10/14/2018		12.5	0.130			
4	Assembled Cables For TSI	INTER.2.1		Drew	10/28/2018		12.5	0.130			
4	Test Cables for TSI with Test Box	INTER.2.2		Drew	10/28/2018		12.5	0.130			
4	Assembled Cables For TSV	INTER.2.3		Drew	10/28/2018		12.5	0.130			
4	Test Cables for TSV with Test Box	INTER.2.4		Drew	10/28/2018		12.5	0.130			
4	Assembled GLV Cables	INTER.2.5		Drew	10/28/2018		12.5	0.130			
4	Tested GLV Cables with Test Box	INTER.2.6		Drew	10/28/2018		12.5	0.130			
4	Assembled Safety Loop Cables	INTER.2.7		Drew	10/28/2018		12.5	0.130			
4	Tested Safety Loop Cables with Test Box	INTER.2.8		Drew	10/28/2018		12.5	0.130			
4	Assembled All W1 Cables	INTER.3.1		Weston	11/4/2018		11.1	0.116			
4	Assembled All W2 Cables	INTER.3.2		Weston	11/4/2018		11.1	0.116			
4	Assembled All W3 Cables	INTER.3.3		Drew	11/4/2018		11.1	0.116			
4	Assembled All W6 Cables	INTER.3.4		Drew	11/4/2018		11.1	0.116			
4	Assembled All W7 Cables	INTER.3.5		Weston	11/4/2018		11.1	0.116			
4	Assembled All W11 Cables	INTER.3.6		Weston	11/4/2018		11.1	0.116			
4	Assembled All W13 Cables	INTER.3.7		Drew	11/4/2018		11.1	0.116			
4	Demo Rule Compliance of Cables Against Competition Rules	INTER.3.8		Weston	11/4/2018		11.1	0.116			
4	Viability Checklist of Critical Systems Wire Sizes Delivered	INTER.3.9		Weston	10/21/2018		11.2	0.116			
4	Verified TSV Cables on TSV Packs	INTER.4.1		Drew	11/25/2018		20	0.208			
4	Verified TSI Cables on TSI System	INTER.4.2		Drew	11/25/2018		20	0.208			
4	Verified GLV Cables on GLV System	INTER.4.3		Drew	11/25/2018		20	0.208			
4	Verified Safety Loop Cables in Safety Loop	INTER.4.4		Drew	11/25/2018		20	0.208			
4	Verified Remaining Cables	INTER.4.5		Weston	11/25/2018		20	0.208			
4	Installed TSV Cables on Car	INTER.5.1		Drew			20	0.208			
4	Installed TSI Cables on Car	INTER.5.2		Drew			20	0.208			
4	Installed GLV Cables on Car	INTER.5.3		Drew			20	0.208			
4	Installed Safety Loop Cables on Car	INTER.5.4		Drew			20	0.208			
4	Installed Remaining Cables on Car	INTER.5.5		Drew			20	0.208			
4	Wire Tester Block Diagram Submitted and Approved	INTER.6.1		Drew	10/7/2018		12.5	0.130			
4	Wire Tester Circuit Schematic Submitted and Approved	INTER.6.2		Drew	10/7/2018		12.5	0.130			
4	Wire Tester Prototype Circuit Built and Tested on Breadboard	INTER.6.3		Drew	9/30/2018		12.5	0.130			
4	Wire Tester Firmware Written and Tested on Breadboard Circuit	INTER.6.4		Drew	9/30/2018		12.5	0.130			
4	Wire Tester Produced on Perfboard	INTER.6.5		Drew	10/7/2018		12.5	0.130			
4	Wire Tester DT Connectors Attached on Tester	INTER.6.6		Drew	10/14/2018		12.5	0.130			
4	Wire Tester Tested with 4 Pin DT Connector	INTER.6.7		Drew	10/14/2018		12.5	0.130			
4	Wire Tester Tested with 6 Pin DT Connector	INTER.6.8		Drew	10/14/2018		12.5	0.130			
4	ATP Delivered and Approved	INTER.7.1		Weston			14.3	0.149			
4	PDR Delivered to MGMT	INTER.7.2		Weston	9/22/2018	9/22/2018	14.3	0.149	14.3	0.149	
4	Interface Control Doc Delivered	INTER.7.3		Drew			14.3	0.149			
4	DCR Delivered	INTER.7.4		Drew			14.3	0.149			
4	User Manual Delivered	INTER.7.5		Drew			14.3	0.149			
4	Final Presentation Delivered	INTER.7.6		Weston			14.3	0.149			
4	ESF Forms Delivered	INTER.7.7		Weston			14.2	0.149			

WBS Level	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	Preliminary Design Report (PDR) Complete	MNG.1	Complete all components of the PDR and deliver presentation	Katie, Alex	9/30/2018	9/28/2018	100	0.69	100.00	0.69	
3	CDR Complete	MNG.2	Complete all components of the CDR and deliver presentation	Katie, Alex	0	0	100	0.69	0	0	
3	Acceptance Test Plan (ATP) Complete	MNG.3	Complete all components of the ATP and execute tests	Hayden	10/7/2018	0	100	0.69	0	0	
3	Final Presentation	MNG.4	Complete and deliver Final Presentation	Katie, Alex	0	0	100	0.69	0	0	
3	Project Poster	MNG.5	Complete all components of Project Poster and deliver poster	Katie, Alex	0	0	100	0.69	0	0	MANAGEMENT (2.8)
3	Software Documentation	MNG.6	Create complete documentation all software and plan for continued maintenance	Yuqiu	0	0	100	0.69	0	0	
3	Paperwork	MNG.7	Complete all deliverable paperwork described in the SOW (Ex: Status Emails)	Katie, Alex	3/22/2019	0	100	0.69	0	0	
3	Communication	MNG.8	Facilitate communications and deadlines to team	Katie	12/7/2018	9/30/2018	100	0.69	#REF!	#REF!	
3	Purchasing Reports and BOM	MNG.9	Manage the purchase of materials and create BOMs to be reviewed and submitted	Robson	0	0	100	0.69	0	0	
4	Budget Approved	M.1.1		Robson	9/22/2018	9/22/2018	11.111	0.077	11.111	0.077	
4	Each Sub-system PDR Approved	M.1.2		Alex	9/22/2018	9/22/2018	11.111	0.077	11.111	0.077	
4	PDR Maintainability Plan Approved	M.1.3		Katie	9/22/2018	9/22/2018	11.111	0.077	11.111	0.077	
4	Overall Acceptance Strategy Delivered	M.1.4		Hayden	9/22/2018	9/22/2018	11.111	0.077	11.111	0.077	
4	Work Breakdown Structure Proposed	M.1.5		Katie	9/25/2018	9/25/2018	11.111	0.077	11.111	0.077	
4	Task/Requirements Delegation Approved	M.1.6		Alex	9/22/2018	9/22/2018	11.111	0.077	11.111	0.077	
4	Meeting Minutes Delivered	M.1.7		Katie	9/30/2018	9/28/2018	11.111	0.077	11.111	0.077	
4	PDR Presentation Delivered	M.1.8		Alex	9/25/2018	9/25/2018	11.111	0.077	11.111	0.077	
4	PDR Delivered	M.1.9		Katie	9/24/2018	9/25/2018	11.111	0.077	11.111	0.077	
4	CDR Delivered	M.2.1		Katie			20.000	0.139			
4	CDR Presentation Delivered	M.2.2		Alex			20.000	0.139			
4	Preliminary Individual BOM Delivered	M.2.3		Robson			20.000	0.139			
4	WBS REV 2.0 Delivered	M.2.4		Katie			20.000	0.139			
4	Meeting Minutes Delivered	M.2.5		Mgmt. Team			20.000	0.139			
4	Compliance Matrix Delivered	M.3.1		Yuqiu			14.286	0.099			
4	Overall Integration Tests Approved	M.3.2		Hayden			14.286	0.099			
4	Individual Integration Tests Approved	M.3.3		Yuqiu			14.286	0.099			
4	Photograph Evidence Annotated	M.3.4		Hayden			14.286	0.099			
4	Subsystem Integral Tests Executed	M.3.5		Yuqiu			14.286	0.099			
4	ATR Delivered	M.3.6		Hayden	12/8/2017		14.286	0.099			
4	WBS REV 3.0 Delivered	M.3.7		Alex	10/7/2018		14.286	0.099			
4	Fully Integrated/Tested LFEV Delivered-Metzgar	M.4.1		Katie			20.000	0.139			
4	Presentation Delivered	M.4.2		Alex			20.000	0.139			
4	Posters Delivered	M.4.3		Katie			20.000	0.139			
4	Fully Updated Website With All Subsystems' Documents	M.4.4		Weston			20.000	0.139			
4	Copies of DVD Delivered with Proper Label (-git, etc)	M.4.5		Alex			20.000	0.139			
4	Major Subsystems Documented	M.5.1		Katie			33.333	0.231			
4	Poster Linked on Website	M.5.2		Alex			33.333	0.231			
4	Overall Poster Created	M.5.3		Katie			33.333	0.231			
4	VSCADA Input Integrated Into Overall Presentation	M.6.1		Yuqiu			25.000	0.174			
4	TSI Integrated Into Overall Presentation	M.6.2		Tianyu			25.000	0.174			
4	CellMen Board Firmware Integrated Into Overall Presentat	M.6.3		Weston			25.000	0.174			
4	PackMan Firmware Integrated Into Overall Presentation	M.6.4		Max			25.000	0.174			
4	SAE Project Management Plan Submitted	M.7.1		Alex	11/2/2018		6.667	0.046			extra points if in by 10/3 or 10/18
4	SAE Structural Equivalency Spreadsheet (SES) Delivered	M.7.2		Alex	11/2/2018		6.667	0.046			
4	SAE ESF-1 Delivered	M.7.3		Alex	11/9/2018		6.667	0.046			extra points if in by 10/10 or 10/25
4	SAE Project Submission	M.7.4		Katie	12/7/2018		6.667	0.046			
4	SAE Team Photo	M.7.5		Katie	12/7/2018		6.667	0.046			
4	SAE Interim Project Management Report	M.7.6		Alex	2/1/2019		6.667	0.046			
4	SAE Impact Attenuator Data (IA) Delivered	M.7.7		Katie	2/8/2019		6.667	0.046			
4	SAE Site Pre-Registration Complete	M.7.8		Alex	2/15/2018		6.667	0.046			
4	SAE ESF-2 Delivered	M.7.9		Katie	2/22/2018		6.667	0.046			
4	SAE Design Report	M.7.10		Alex	3/22/2019		6.667	0.046			
4	Sustainability Report	M.7.11		Katie	3/22/2019		6.667	0.046			
4	Design Specification Sheet	M.7.12		Alex	3/22/2019		6.667	0.046			
4	FSEA Forms Delivered	M.7.13		Katie	TBA by SAE		6.667	0.046			
4	N- Users Manual	M.7.14		Alex	12/7/2018		6.667	0.046			
4	N- Final Report and Maintenance Manual	M.7.15		Katie	12/7/2018		6.667	0.046			
4	Instructional Videos Delivered	M.8.1		Katie			20.000	0.139	20.000	0.139	
4	Contacted College Communications Department	M.8.2		Katie	12/7/2018	9/30/2018	20.000	0.139	#REF!	#REF!	
4	Meet the Team Page Complete	M.8.3	Team pic, individual pics, and bios uploaded to website	Weston	10/26/2018		20.000	0.139			
4	PDR Documentation Uploaded to Website	M.8.4		Weston	9/30/2018	9/28/2018	20.000	0.139	20.000	0.139	
4	CDR Documentation Uploaded to Website	M.8.5		Weston			20.000	0.139			
4	Finalized BOMs Delivered	M.9.1		Robson			25.000	0.174			
4	Cumulative Purchase tables Delivered	M.9.2		Robson			25.000	0.174			
4	Summary Tables By Subsystem/Week Delivered	M.9.3		Robson			25.000	0.174			
4	Structural Analysis of Purchases Delivered	M.9.4		Robson			25.000	0.174			

WBS Level	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	Seat Integration	FRAME.1	Ensure driver can physically remain in vehicle to drive	David, Brian			100		0	0	
3	Frame Completion	FRAME.2	Frame is constructed to completion	David, Brian			100		0	0	FRAME (2.15)
3	Body Completion	FRAME.3	Body of the car is complete	David, Brian			100		0	0	
3	Safety Components	FRAME.4	All safety components are compliant with the rules	David, Brian			100		0	0	
4	Seat Ordered	FRAME.1.1	A seat has been selected and purchased				20				
4	Seat Mounted	FRAME.1.2	A mount has been selected and purchased				20				
4	Head Rest Ordered	FRAME.1.3	The head rest has been selected and purchased				20				
4	Head Rest Mounted	FRAME.1.4					20				
4	Harness Tab	FRAME.1.5	The harness tab has been manufactured				20				does this need to be designed and approved?
4	Frame Design Completed and Sent to Manufacturer	FRAME.2.1					25				
4	Part Mounts	FRAME.2.2	The mounting components have been manufactured				25				
4	Bulkhead	FRAME.2.3	The bulkhead has been manufactured				25				
4	Push/pull Bar	FRAME.2.4	The push/pull bar has been manufactured				25				
4	Nose Cone Designed and Fabricated	FRAME.3.1	The nose cone has been manufactured				50				does this need to be designed and approved?
4	Body Parts	FRAME.3.2	Extra body components have been made				50				
4	Seat Belts	FRAME.4.1	Seat belt tabs have been manufactured				25				
4	Firewall	FRAME.4.2	The firewall has been created and safely demonstrated				25				
4	Impact Attenuator	FRAME.4.3	The impact attenuator has been manufactured and tested				25				
4	Protection bars	FRAME.4.4	Protection bars have been manufactured				25				

is there a test plan that needs to be created?
are there deliverables? either for class or SAE?

WBS Level	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	Mounting	MOTOR.1	Motor is mounted and compliant with safety regulations	Jordan, Nick, Bill			100.00		0	0	
3	Chain	MOTOR.2	Chain system completed	Jordan, Nick, Bill			100		0	0	MOTOR/DRIVETRAIN (2.16)
3	Drive Shaft	MOTOR.3	Drive shaft completed	Jordan, Nick, Bill			100		0	0	
3	Differential	MOTOR.4	Differential completed	Jordan, Nick, Bill			100		0	0	
4	Motor Mount Cross Bar	MOTOR.1.1					14.29				
4	Diff Mount	MOTOR.1.2					14.29				How do we know when any of these have been completed/delivered?
4	Ecentric Dif Mount	MOTOR.1.3					14.29				what do these mean? need more words in either WBS item or description
4	Ecentric Dif Mount Pin	MOTOR.1.4					14.29				
4	Motor Sprocket	MOTOR.1.5					14.29				
4	Plunger & Spring Set	MOTOR.1.6					14.29				
4	Dif/Motor - Frame Mount	MOTOR.1.7					14.29				
4	Chain	MOTOR.2.1					50				
4	Chain Guard	MOTOR.2.2					50				
4	Right Halfshaft	MOTOR.3.1					25				
4	Left Halfshaft	MOTOR.3.2					25				
4	Plastic Plunger Halfshaft Inserts	MOTOR.3.3					25				
4	Tripod	MOTOR.3.4					25				
4	Differential	MOTOR.4.1					33.3				how is this item different from the MOTOR.4?
4	Diff Bearing	MOTOR.4.2					33.3				
4	Diff Sprocket	MOTOR.4.3					33.4				

is there a test plan?
are there deliverables? either for class or SAE?

WBS Level	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	FRONT SUSPENSION	SUSP.1		Justin, Brian	10/22		100		0	0	
3	REAR SUSPENSION	SUSP.2		Justin, Brian			100		0	0	
3	INTEGRATION	SUSP.3		Justin, Brian			100		0	0	BRAKES/SUSPENSION 2.18
3	BRAKES	SUSP.4		Justin, Brian			100		0	0	
3	WHEELS	SUSP.5		Justin, Brian			100		0	0	
4	Front Upright Bracket	SUSP.1.1					10				
4	Front Upright	SUSP.1.2					10				
4	Front Damper	SUSP.1.3					10				
4	Front Rocker	SUSP.1.4					10				
4	Front Pushrod	SUSP.1.5					10				
4	Front Right Tube Adapter	SUSP.1.6					10				
4	Front Left Tube Adapter	SUSP.1.7					10				
4	Front Roll Bar	SUSP.1.8					10				
4	Front Tierod	SUSP.1.9					10				
4	Front Damper Tab	SUSP.1.10					10				
4	Rear Anti Rollbar	SUSP.2.1					25				
4	Rear Damper Tab	SUSP.2.2					25				
4	Rear Upright Brakets	SUSP.2.3					25				
4	Rear Uprights	SUSP.2.4					25				
4	Upright Bearing	SUSP.3.1					12.5				
4	Upright Bearing Spacer	SUSP.3.2					12.5				
4	Rocker Tab	SUSP.3.3					12.5				
4	Thin Camber Shim	SUSP.3.4					12.5				
4	Thick Camber Shim	SUSP.3.5					12.5				
4	Upright Locking Collar	SUSP.3.6					12.5				
4	Pickup Point Spacer	SUSP.3.7					12.5				
4	Tripod Housing	SUSP.3.8					12.5				
4	Brake Rotor	SUSP.4.1					25				
4	Brake Caliper	SUSP.4.2					25				
4	Flexible Brake Lines	SUSP.4.3					25				
4	In-board Brake lines	SUSP.4.4					25				
4	Wheel Hubs	SUSP.5.1					33.3				
4	Rims	SUSP.5.2					33.3				
4	Tires	SUSP.5.3					33.4				

how do we know when these items are delivered/completed?
 are these items being designed, installed, or tested?
 is there a testing plan?
 are there deliverables? either to class or SAE?

WBS Level	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	RACK & PINION	STEERING.1		Adam, Jordan			100		0	0	
3	GEARBOX	STEERING.2		Adam, Jordan			100		0	0	STEER 2.17
3	MOUNTING/INTEGRATION	STEERING.3		Adam, Jordan			100		0	0	
4	Rack & Pinion Bracket	STEERING.1.1					33.3				How do we know when these items are delivered/completed?
4	R&P - Tierod Tube	STEERING.1.2					33.3				
4	Rack-Gearbox Tube	STEERING.1.3					33.4				
4	90 - Gearbox	STEERING.2.1					33.3				
4	Gearbox keys	STEERING.2.2					33.3				
4	Gearbox Mount	STEERING.2.3					33.4				
4	Steering Wheel	STEERING.3.1					16.66				
4	Keyed Couplings	STEERING.3.2					16.66				
4	Female Pinion Coupler	STEERING.3.3					16.66				
4	Hexagonal Shaft	STEERING.3.4					16.66				
4	Hex tube Mount	STEERING.3.5					16.66				
4	Quick Release	STEERING.3.6					16.7				

WBS Level	WBS Item	WBS Number	Description	Owner	Est. Completion	Completion Date	Total Level Up Completion (%)	Total Project Completion (%)	Level Up Progress (%)	Project Progress (%)	Notes
3	PEDAL	PEDAL.1		Adam, Justin			100		0	0	
3	HYDRAULICS	PEDAL.2		Adam, Justin			100		0	0	PEDAL 2.19
3	MOUNTING/INTEGRATION	PEDAL.3		Adam, Justin			100		0	0	
4	Pedal Pivot Collar	PEDAL.1.1					50				How do we know when any of these have been delivered/completed?
4	Pedal Pivot Shaft	PEDAL.1.2					50				
4	Master Cylinder	PEDAL.2.1					33.3				
4	Brake Fluid Resovior	PEDAL.2.2					33.3				
4	Fluid Pressure Switch	PEDAL.2.3					33.4				
4	Mechanical Stop	PEDAL.3.1					16.66				
4	Potentiometer & Mount	PEDAL.3.2					16.66				
4	Brake over Travel Switch	PEDAL.3.3					16.66				
4	Pedal Mount	PEDAL.3.4					16.66				
4	Accelrorator Pedal Spring	PEDAL.3.5					16.66				
4	L-8020 Mounts	PEDAL.3.6					16.7				