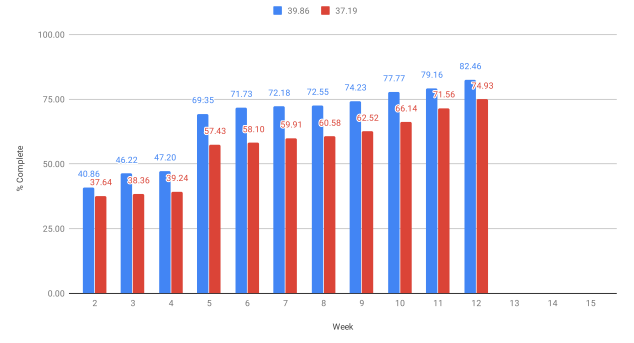


Task / Item	In Progress Projected (%)	In Progress Actual (%)	Complete	Dependencies
Motor Spinning in Dyno Room	100.00%	100.00%	No	Motor Purchased Motor Controller Purchased Pulley / Shaft Fabricated Motor Installed in Motor Mount MCS Installed in Fixture Pulley / Shaft Connected to Motor
Motor Purchased	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	100.00%	87.50%	No	TSI Enclosure Fabricated
GLV Board Manufactured	100.00%	100.00%	Yes	
GLV Mounting Plate Manufactured	100.00%	100.00%	Yes	
Safety Loop Testing Panel Mounted in Dyno Room Rack	100.00%	100.00%	Yes	
Safety Loop Functional in Dyno Room	100.00%	66.67%	Yes	GLV Board Manufactured
GLV Enclosure Manufactured	100.00%	99.99%	No	
TSI Board Manufactured	92.86%	85.71%	No	
TSI Mounting Plate Manufactured	87.50%	87.50%	Yes	
TSI Throttle / Brake Control Panel Manufactured	88.89%	77.78%	Yes	TSI Board Manufactured TSI Mounting Plate Manufactured
TSI Enclosure Manufactured	100.00%	87.50%	No	
TSI Firmware Written	100.00%	100.00%	Yes	
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	50.00%	33.33%	No	
TSV Packs Connected to Motor Controller in Dyno Room	0.00%	0.00%	No	
TSV CellMan Boards Fabricated	53.85%	46.15%	No	
TSV SegMan Boards Fabricated	46.67%	40.00%	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	37.50%	25.00%	No	
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%	50.00%	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	33.33%	33.33%	No	
SCADA Displaying Data to GLV Screen	100.00%	100.00%	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	

Week	Projected Progress	Actual Progress
1	39.86	37.19
2	40.86	37.64
3	46.22	38.36
4	47.20	39.24
5	69.35	57.43
6	71.73	58.10
7	72.18	59.91
8	72.55	60.58
9	74.23	62.52
10	77.77	65.14
11	79.16	71.56
12	82.46	74.93

Projected Progress and Actual Progress



Integration Task	Related WBS Items	In Progress WBS Items	Projected Completion (%)	Completed WBS Items	Actual Completion (%)
Motor Spinning in Dyno Room	PART.4.1 - Motor Controller Purchase Order Submitted	None	100.00%	PART.4.1 - Motor Controller Purchase Order Submitted	100.00%
	PART.4.2 - Motor Controller Acquired			PART.4.2 - Motor Controller Acquired	
	PART.5.1 - Motor Purchase Order Submitted			PART.5.1 - Motor Purchase Order Submitted	
	PART.5.2 - Motor Acquired			PART.5.2 - Motor Acquired	
	PART.5.3 - Motor Mounted in Motor Mount			PART.5.3 - Motor Mounted in Motor Mount	
	PART.6.1 - Motor / Pulley Connected			PART.6.1 - Motor / Pulley Connected	
	PART.6.2 - Pulley Connected to Dyno Belt			PART.6.2 - Pulley Connected to Dyno Belt	
	PART.6.3 - Motor Controller Connected to Motor			PART.6.3 - Motor Controller Connected to Motor	
Motor Purchased	PART.5.1 - Motor Purchase Order Submitted	None	100.00%	PART.5.1 - Motor Purchase Order Submitted	100.00%
	PART.5.2 - Motor Acquired			PART.5.2 - Motor Acquired	
Motor Controller Purchased	PART.4.1 - Motor Controller Purchase Order Submitted	None	100.00%	PART.4.1 - Motor Controller Purchase Order Submitted	100.00%
	PART.4.2 - Motor Controller Acquired			PART.4.2 - Motor Controller Acquired	
Motor Controller Connected to TSI, Cooling, and Motor in Dyno Room	PART.4.1 - Motor Controller Purchase Order Submitted	TSI.1 - TSI Board Delivered	100.00%	PART.4.1 - Motor Controller Purchase Order Submitted	83.33%
	PART.4.2 - Motor Controller Acquired			PART.4.2 - Motor Controller Acquired	
	TSI.1 - TSI Board Delivered				
	COOL.2.3 - Cooling System Mounted in Dyno Room			COOL.2.3 - Cooling System Mounted in Dyno Room	
	COOL.3.1 - Cooling System Connected to MCS			COOL.3.1 - Cooling System Connected to MCS	
	COOL.3.3 - Cooling System Moving Water to All Connected Systems			COOL.3.3 - Cooling System Moving Water to All Connected Systems	
Motor Mount Fabricated	PART.1.1 - Motor Mount Mechanical Drawing Submitted to Machine Shop and Accepted		100.00%	PART.1.1 - Motor Mount Mechanical Drawing Submitted to Machine Shop and Accepted	100.00%
	PART.1.2 - Motor Mount Fabricated			PART.1.2 - Motor Mount Fabricated	
	PART.1.3 - Motor Mount Secured in Dyno Room			PART.1.3 - Motor Mount Secured in Dyno Room	
Motor Installed in Motor Mount in Dyno Room	PART.1.1 - Motor Mount Mechanical Drawing Submitted to Machine Shop and Accepted		100.00%	PART.1.1 - Motor Mount Mechanical Drawing Submitted to Machine Shop and Accepted	100.00%
	PART.1.2 - Motor Mount Fabricated			PART.1.2 - Motor Mount Fabricated	
	PART.1.3 - Motor Mount Secured in Dyno Room			PART.1.3 - Motor Mount Secured in Dyno Room	
	PART.5.1 - Motor Purchase Order Submitted			PART.5.1 - Motor Purchase Order Submitted	
	PART.5.2 - Motor Acquired			PART.5.2 - Motor Acquired	
	PART.5.3 - Motor Mounted in Motor Mount			PART.5.3 - Motor Mounted in Motor Mount	
Pulley / Shaft Fabricated	PART.2.1 - Pulley Mechanical Drawing Submitted		100.00%	PART.2.1 - Pulley Mechanical Drawing Submitted	100.00%
	PART.2.2 - Shaft Drawing Submitted			PART.2.2 - Shaft Drawing Submitted	
	PART.2.3 - Pulley Manufactured / Purchased			PART.2.3 - Pulley Manufactured / Purchased	
	PART.2.4 - Shaft Manufactured / Purchased			PART.2.4 - Shaft Manufactured	
	PART.2.5 - Pulley System Mounted in Dyno Room			PART.2.5 - Pulley System Mounted in Dyno Room	
Pulley / Shaft Connected to Motor and Mounted in Dyno Room	PART.1.1 - Motor Mount Mechanical Drawing Submitted to Machine Shop and Accepted		100.00%	PART.1.1 - Motor Mount Mechanical Drawing Submitted to Machine Shop and Accepted	100.00%
	PART.1.2 - Motor Mount Fabricated			PART.1.2 - Motor Mount Fabricated	
	PART.1.3 - Motor Mount Secured in Dyno Room			PART.1.3 - Motor Mount Secured in Dyno Room	
	PART.5.1 - Motor Purchase Order Submitted			PART.2.1 - Pulley Mechanical Drawing Submitted	
	PART.5.2 - Motor Acquired			PART.2.3 - Pulley Manufactured / Purchased	
	PART.5.3 - Motor Mounted in Motor Mount			PART.2.2 - Shaft Drawing Submitted	
	PART.2.1 - Pulley Mechanical Drawing Submitted			PART.2.4 - Shaft Manufactured	
	PART.2.2 - Shaft Drawing Submitted			PART.5.1 - Motor Purchase Order Submitted	
	PART.2.3 - Pulley Manufactured / Purchased			PART.5.2 - Motor Acquired	
	PART.2.4 - Shaft Manufactured / Purchased			PART.5.3 - Motor Mounted in Motor Mount	
	PART.2.5 - Pulley System Mounted in Dyno Room			PART.2.5 - Pulley System Mounted in Dyno Room	
MCS / TSI / Cooling Fixture Fabricated	PART.3.1 - Fixture Mechanical Drawing Submitted to Machine Shop		100.00%	PART.3.1 - Fixture Mechanical Drawing Submitted to Machine Shop	100.00%
	PART.3.2 - Fixture Fabricated			PART.3.2 - Fixture Fabricated	
	PART.3.3 - Fixture Mounted in Dyno Room			PART.3.3 - Fixture Mounted in Dyno Room	

Integration Task	Related WBS Items	In Progress WBS Items	Projected Completion (%)	Completed WBS Items	Actual Completion (%)
GLV Board Manufactured	GLV.1.1 - GLV BoB Circuit Schematic Complete GLV.1.2 - GLV BoB PCB Layout Complete and Approved GLV.1.3 - GLV BoB PCB Purchase Order Approved and Submitted GLV.1.4 - PCB Parts List Purchase Order Approved and Submitted GLV.1.5 - GLV BoB Acquired GLV.1.6 - GLV BoB Mount Mechanical Drawing Submitted to Machine Shop GLV.1.7 - GLV BoB Mount Fabricated and Acquired GLV.1.8 - PCB Populated and Tested GLV.1.9 - PCB Schematic Revised GLV.1.10 - PCB Layout Revised GLV.1.11 - PCB Respun and Populated GLV.1.12 - PCB Testing Verified GLV.1.13 - PCB Installed on Mount in Rack in Dyno Room GLV.1.14 - PCB Installed in Enclosure		100.00%	GLV.1.1 - GLV BoB Circuit Schematic Complete GLV.1.2 - GLV BoB PCB Layout Complete and Approved GLV.1.3 - GLV BoB PCB Purchase Order Approved and Submitted GLV.1.4 - PCB Parts List Purchase Order Approved and Submitted GLV.1.5 - GLV BoB Acquired GLV.1.6 - GLV BoB Mount Mechanical Drawing Submitted to Machine Shop GLV.1.7 - GLV BoB Mount Fabricated and Acquired GLV.1.8 - PCB Populated and Tested GLV.1.9 - PCB Schematic Revised GLV.1.10 - PCB Layout Revised GLV.1.11 - PCB Respun and Populated GLV.1.12 - PCB Testing Verified GLV.1.13 - PCB Installed on Mount in Rack in Dyno Room GLV.1.14 - PCB Installed in Enclosure	100.00%
GLV Mounting Plate Manufactured	GLV.1.6 - GLV BoB Mount Mechanical Drawing Submitted to Machine Shop GLV.1.7 - GLV BoB Mount Fabricated GLV.1.13 - GLV BoB Installed on Mount in Rack in Dyno Room		100.00%	GLV.1.6 - GLV BoB Mount Mechanical Drawing Submitted to Machine Shop GLV.1.7 - GLV BoB Mount Fabricated GLV.1.13 - GLV BoB Installed on Mount in Rack in Dyno Room	100.00%
Safety Loop Testing Panel Mounted in Dyno Room Rack	INT.1.7 - Left Side Panel Block Diagram Delivered INT.1.8 - Left Side Panel BoM Purchase Order Approved and Purchased INT.1.9 - Left Side Panel Mechanical Drawing Submitted to Machine Shop INT.1.10 - Left Side Panel Fabricated and Wired with Needed Buttons / Switches INT.1.11 - Right Side Panel Block Diagram Delivered INT.1.12 - Right Side Panel BoM Purchase Order Approved and Purchased INT.1.13 - Right Side Panel Mechanical Drawing Submitted to Machine Shop INT.1.14 - Right Side Panel Fabricated and Wired with Needed Buttons / Switches INT.1.15 - Left Side Panel Installed in Dyno Room INT.1.16 - Right Side Panel Installed in Dyno Room GLV.5.1 - Dyno Safety Loop Block Diagram Complete and Submitted GLV.5.2 - Dyno Power Supply Safety Loop On/Off Mechanism Delivered INT.3.15 - Left Side Panel Connected to GLV In Dyno Room INT.3.16 - Right Side Panel Connected to GLV In Dyno Room INT.3.18 - Dyno Power Supply Connected to GLV Safety Loop INT.1.17 - Cockpit Panel Block Diagram Delivered INT.1.18 - Cockpit Panel BoM Purchase Order Approved and Purchased INT.1.19 - Cockpit Panel Designed and Manufactured INT.1.20 - Cockpit Panel Components Integrated and Installed in Dyno Room INT.1.21 - Cockpit Panels Tested in Dyno Room		100.00%	INT.1.7 - Left Side Panel Block Diagram Delivered INT.1.8 - Left Side Panel BoM Purchase Order Approved and Purchased INT.1.9 - Left Side Panel Mechanical Drawing Submitted to Machine Shop INT.1.10 - Left Side Panel Fabricated and Wired with Needed Buttons / Switches INT.1.11 - Right Side Panel Block Diagram Delivered INT.1.12 - Right Side Panel BoM Purchase Order Approved and Purchased INT.1.13 - Right Side Panel Mechanical Drawing Submitted to Machine Shop INT.1.14 - Right Side Panel Fabricated and Wired with Needed Buttons / Switches INT.1.15 - Left Side Panel Installed in Dyno Room INT.1.16 - Right Side Panel Installed in Dyno Room INT.1.17 - Cockpit Panel Block Diagram Delivered INT.1.18 - Cockpit Panel BoM Purchase Order Approved and Purchased INT.1.19 - Cockpit Panel Designed and Manufactured GLV.5.1 - Dyno Safety Loop Block Diagram Complete and Submitted GLV.5.2 - Dyno Power Supply Safety Loop On/Off Mechanism Delivered INT.3.15 - Left Side Panel Connected to GLV In Dyno Room INT.3.16 - Right Side Panel Connected to GLV In Dyno Room INT.3.18 - Dyno Power Supply Connected to GLV Safety Loop INT.1.20 - Cockpit Panel Components Integrated and Installed in Dyno Room INT.1.21 - Cockpit Panels Tested in Dyno Room	100.00%
Safety Loop Functional In Dyno Room	INT.1.22 - Demo of Left Side Panel Closing / Opening Safety Loop INT.1.23 - Demo of Right Side Panel Closing / Opening Safety Loop INT.1.24 - Demo of Safety Loop shutting off the Dyno Power Supply from Safe Distance INT.1.25 - Demo of Cockpit Panel Closing / Opening Safety Loop INT.1.26 - Demo of Cockpit Panel Putting Car / Dyno into Drive Mode INT.3.9 - GLV and Safety Loop Connected	INT.1.25 - Demo of Cockpit Panel Closing / Opening Safety Loop INT.1.26 - Demo of Cockpit Panel Putting Car / Dyno into Drive Mode	100.00%	INT.1.22 - Demo of Left Side Panel Closing / Opening Safety Loop INT.1.23 - Demo of Right Side Panel Closing / Opening Safety Loop INT.1.24 - Demo of Safety Loop shutting off the Dyno Power Supply from Safe Distance INT.3.9 - GLV and Safety Loop Connected	66.67%
GLV Enclosure Manufactured	GLV.2.1 - Enclosure Designed, Approved, and Submitted to Machine Shop GLV.2.2 - Enclosure Parts Acquired GLV.2.3 - Enclosure Assembled		100.00%	GLV.2.1 - Enclosure Designed, Approved, and Submitted to Machine Shop GLV.2.2 - Enclosure Parts Acquired GLV.2.3 - Enclosure Assembled	100.00%

Integration Task	Related WBS Items	In Progress WBS Items	Projected Completion (%)	Completed WBS Items	Actual Completion (%)
<b>TSI Board Manufactured</b>	TSI.1.1 - TSI Circuit Schematic Delivered and Approved	TSI.1.12 - PCB Testing Verified	92.86%	TSI.1.1 - TSI Circuit Schematic Delivered and Approved	85.71%
	TSI.1.2 - TSI PCB Layout Complete and Approved			TSI.1.2 - TSI PCB Layout Complete and Approved	
	TSI.1.3 - TSI PCB Purchase Order Approved and Submitted			TSI.1.3 - TSI PCB Purchase Order Approved and Submitted	
	TSI.1.4 - TSI PCB Parts List Purchase Order Approved and Submitted			TSI.1.4 - TSI PCB Parts List Purchase Order Approved and Submitted	
	TSI.1.5 - TSI PCB Acquired			TSI.1.5 - TSI PCB Acquired	
	TSI.1.6 - PCB Mount Mechanical Drawing Submitted to Machine Shop			TSI.1.6 - PCB Mount Mechanical Drawing Submitted to Machine Shop	
	TSI.1.7 - PCB Mount Fabricated and Acquired			TSI.1.7 - PCB Mount Fabricated and Acquired	
	TSI.1.8 - TSI PCB Populated and Tested			TSI.1.8 - TSI PCB Populated and Tested	
	TSI.1.9 - PCB Schematic Revised			TSI.1.9 - PCB Schematic Revised	
	TSI.1.10 - PCB Layout Revised			TSI.1.10 - PCB Layout Revised	
	TSI.1.11 - PCB Respun and Populated			TSI.1.11 - PCB Respun and Populated	
	TSI.1.12 - PCB Testing Verified			TSI.1.12 - PCB Testing Verified	
	TSI.1.13 - PCB Installed on Mount in Rack in Dyno Room			TSI.1.13 - PCB Installed on Mount in Rack in Dyno Room	
	TSI.1.14 - PCB Installed in Enclosure				
<b>TSI Mounting Plate Manufactured</b>	TSI.1.6 - PCB Mount Mechanical Drawing Submitted to Machine Shop		87.50%	TSI.1.6 - PCB Mount Mechanical Drawing Submitted to Machine Shop	87.50%
	TSI.1.7 - PCB Mount Fabricated and Acquired			TSI.1.7 - PCB Mount Fabricated and Acquired	
	TSI.1.13 - PCB Installed on Mount in Rack in Dyno Room			TSI.1.13 - PCB Installed on Mount in Rack in Dyno Room	
	TSI.1.14 - PCB Installed in Enclosure			TSI.1.14 - PCB Installed in Enclosure	
	TSI.2.4 - High Voltage Mounting Plate Drawing Approved and Submitted to Machine Shop			TSI.2.4 - High Voltage Mounting Plate Drawing Approved and Submitted to Machine Shop	
	TSI.2.5 - High Voltage Mounting Plate Acquired			TSI.2.5 - High Voltage Mounting Plate Acquired	
	TSI.2.6 - High Voltage Mounting Plate Populated and Wired			TSI.2.6 - High Voltage Mounting Plate Populated and Wired	
	TSI.2.7 - High Voltage Mounting Plate Installed in Enclosure			TSI.2.7 - High Voltage Mounting Plate Installed in Enclosure	
<b>TSI Throttle / Brake Control Panel Manufactured</b>	TSI.3.2 - Block Diagram and Wiring Plan Delivered	TSI.3.3 - Throttle Connected to Dyno Pots	88.89%	TSI.3.2 - Block Diagram and Wiring Plan Delivered	77.78%
	TSI.3.3 - Throttle Connected to Dyno Pots			TSI.3.3 - Throttle Connected to Dyno Pots	
	TSI.3.4 - Brake Connected and Integrated into Safety Loop			TSI.3.4 - Brake Connected and Integrated into Safety Loop	
	TSI.3.5 - Brake Light Connected and Reacts to Brake			TSI.3.5 - Brake Light Connected and Reacts to Brake	
	TSI.3.6 - Demo Pedal Electronics Communicating with SCADA			TSI.3.6 - Demo Pedal Electronics Communicating with SCADA	
	TSI.1.6 - PCB Mount Mechanical Drawing Submitted to Machine Shop			TSI.1.6 - PCB Mount Mechanical Drawing Submitted to Machine Shop	
	TSI.1.7 - PCB Mount Fabricated and Acquired			TSI.1.7 - PCB Mount Fabricated and Acquired	
	TSI.1.13 - PCB Installed on Mount in Rack in Dyno Room			TSI.1.13 - PCB Installed on Mount in Rack in Dyno Room	
	TSI.1.14 - PCB Installed in Enclosure				
<b>TSI Enclosure Manufactured</b>	TSI.2.1 - 2D Enclosure Designed, Approved, and Submitted to Machine Shop	TSI.2.8 - All Components Mounted in 2D Enclosure and Connected	100.00%	TSI.2.1 - 2D Enclosure Designed, Approved, and Submitted to Machine Shop	87.50%
	TSI.2.2 - 2D Enclosure Parts and Materials Acquired			TSI.2.2 - 2D Enclosure Parts and Materials Acquired	
	TSI.2.3 - 2D Enclosure Assembled			TSI.2.3 - 2D Enclosure Assembled	
	TSI.2.4 - High Voltage Mounting Plate Drawing Approved and Submitted to Machine Shop			TSI.2.4 - High Voltage Mounting Plate Drawing Approved and Submitted to Machine Shop	
	TSI.2.5 - High Voltage Mounting Plate Acquired			TSI.2.5 - High Voltage Mounting Plate Acquired	
	TSI.2.6 - High Voltage Mounting Plate Populated and Wired			TSI.2.6 - High Voltage Mounting Plate Populated and Wired	
	TSI.2.7 - High Voltage Mounting Plate Installed in Enclosure			TSI.2.7 - High Voltage Mounting Plate Installed in Enclosure	
	TSI.2.8 - All Components Mounted in 2D Enclosure and Connected				
<b>TSI Firmware Written</b>	TSI.4.1 - Firmware Block Diagram Delivered and Approved		100.00%	TSI.4.1 - Firmware Block Diagram Delivered and Approved	100.00%
	TSI.4.2 - Firmware Logic / State Machine Delivered and Approved			TSI.4.2 - Firmware Logic / State Machine Delivered and Approved	
	TSI.4.3 - Fall Semester Bugs Discovered and Fixed			TSI.4.3 - Fall Semester Bugs Discovered and Fixed	
	TSI.4.4 - Firmware I/O Functionality Delivered			TSI.4.4 - Firmware I/O Functionality Delivered	
	TSI.4.5 - CANBus Isolator Purchased and Acquired			TSI.4.5 - CANBus Isolator Purchased and Acquired	
	TSI.4.6 - Communication with SCADA via CANBus Complete			TSI.4.6 - Communication with SCADA via CANBus Complete	

Integration Task	Related WBS Items	In Progress WBS Items	Projected Completion (%)	Completed WBS Items	Actual Completion (%)
Cooling Loop Filled with Water and Tested For Leaks	COOL.2.1 - Cooling loop filled with water and tested for leaks		100.00%	COOL.2.1 - Cooling loop filled with water and tested for leaks	100.00%
	COOL.2.2 - Leaks in loop identified and repaired			COOL.2.2 - Leaks in loop identified and repaired	
	COOL.2.3 - Cooling System mounted on Fixture in Dyno Room			COOL.2.3 - Cooling System mounted on Fixture in Dyno Room	
Cooling System Mounted on Fixture in Dyno Room	COOL.1.1 - Mechanical Drawing of Mounting Delivered		100.00%	COOL.1.1 - Mechanical Drawing of Mounting Delivered	100.00%
	PART.3.1 - Fixture Mechanical Drawing Submitted to Machine Shop			PART.3.1 - Fixture Mechanical Drawing Submitted to Machine Shop	
	PART.3.2 - Fixture Fabricated			PART.3.2 - Fixture Fabricated	
	PART.3.3 - Fixture Mounted in Dyno Room			PART.3.3 - Fixture Mounted in Dyno Room	
Cooling System Connected to MCS and Motor in Dyno Room	PART.4.1 - Motor Controller Purchase Order Submitted		100.00%	COOL.2.3 - Cooling System Mounted in Dyno Room on Fixture in Dy	100.00%
	PART.4.2 - Motor Controller Acquired			COOL.3.1 - Cooling System Connected to MCS	
	COOL.2.3 - Cooling System Mounted in Dyno Room			COOL.3.3 - Cooling System Moving Water to All Connected Systems	
	COOL.3.1 - Cooling System Connected to MCS			PART.4.1 - Motor Controller Purchase Order Submitted	
	COOL.3.3 - Cooling System Moving Water to All Connected Systems			PART.4.2 - Motor Controller Acquired	
	PART.5.1 - Motor Purchase Order Submitted			PART.5.1 - Motor Purchase Order Submitted	
	PART.5.2 - Motor Acquired			PART.5.2 - Motor Acquired	
	PART.5.3 - Motor Mounted in Motor Mount			PART.5.3 - Motor Mounted in Motor Mount	
Cooling System Connected to TSI in Dyno Room	COOL.2.3 - Cooling System Mounted in Dyno Room	TSI.1 - TSI Board Delivered	100.00%	PART.3.1 - Fixture Mechanical Drawing Submitted to Machine Shop	80.00%
	TSI.1 - TSI Board Delivered			COOL.2.3 - Cooling System Mounted in Dyno Room	
	PART.3.1 - Fixture Mechanical Drawing Submitted to Machine Shop			PART.3.2 - Fixture Fabricated	
	PART.3.2 - Fixture Fabricated			PART.3.3 - Fixture Mounted in Dyno Room	
	PART.3.3 - Fixture Mounted in Dyno Room				
Cooling Enclosure Manufactured	COOL.1.1 - Enclosure Designed, Approved, and Submitted to Machine Shop	COOL.1.1 - Enclosure Designed, Approved, and Submitted to Machi	20.00%	None	0.00%
	COOL.1.2 - Enclosure Parts Acquired				
	COOL.1.3 - Enclosure Assembled				
	COOL.2.2 - Cables Connected				

Integration Task	Related WBS Items	In Progress WBS Items	Projected Completion (%)	Completed WBS Items	Actual Completion (%)
<b>TSV Packs Manufactured</b>	TSV.4.1 - Pack High Level Block Diagram Delivered and Accepted	TSV.4.3 - 2D Enclosure Designed, Approved, and Submitted to Machine Shop	50.00%	TSV.4.1 - Pack High Level Block Diagram Delivered and Accepted	33.33%
	TSV.4.2 - Pack Design Review Completed	TSV.4.11 - High Voltage Path Bars Designed and Submitted to Machine Shop		TSV.4.2 - Pack Design Review Completed	
	TSV.4.3 - 2D Enclosure Designed, Approved, and Submitted to Machine Shop			TSV.4.7 - Cell Connect Bars Designed and Submitted to Machine Shop	
	TSV.4.4 - 2D Enclosure Parts Acquired			TSV.4.8 - Cell Connect Bars Acquired	
	TSV.4.5 - 2D Enclosure Assembled				
	TSV.4.6 - PCBs Installed in 2D Enclosure				
	TSV.4.7 - Cell Connect Bars Designed and Submitted to Machine Shop				
	TSV.4.8 - Cell Connect Bars Acquired				
	TSV.4.9 - Battery Straps Designed and Submitted to Machine Shop				
	TSV.4.10 - Battery Straps Acquired				
	TSV.4.11 - High Voltage Path Bars Designed and Submitted to Machine Shop				
	TSV.4.12 - High Voltage Path Bars Acquired				
<b>TSV Packs Connected to Motor Controller in Dyno Room</b>	WIRE.3.11 - TSV - Motor Controller Connected	None	0.00%	None	0.00%
<b>TSV CellMan Boards Fabricated</b>	TSV.1.1 - First CellMan PCB Circuit Schematic Complete and Approved	TSV.1.7 - First CellMan PCB Debugged and Complete	53.85%	TSV.1.1 - First CellMan PCB Circuit Schematic Complete and Approved	46.15%
	TSV.1.2 - First CellMan PCB Layout Complete and Approved			TSV.1.2 - First CellMan PCB Layout Complete and Approved	
	TSV.1.3 - First CellMan PCB Purchase Order Approved and Submitted			TSV.1.3 - First CellMan PCB Purchase Order Approved and Submitted	
	TSV.1.4 - CellMan PCB Parts List Purchase Order Approved and Submitted			TSV.1.4 - CellMan PCB Parts List Purchase Order Approved and Submitted	
	TSV.1.5 - First CellMan PCB Acquired			TSV.1.5 - First CellMan PCB Acquired	
	TSV.1.6 - First CellMan PCB Populated and Tested			TSV.1.6 - First CellMan PCB Populated and Tested	
	TSV.1.7 - First CellMan PCB Debugged and Complete				
	TSV.1.8 - First CellMan PCB Installed on Mount in Dyno Room				
	TSV.1.9 - CellMan Schematic Revised				
	TSV.1.10 - CellMan Layout Revised				
	TSV.1.11 - Remaining CellMan PCBs Purchased and Acquired				
	TSV.1.12 - Remaining CellMan PCBs Populated and Debugged				
	TSV.1.13 - CellMen Installed in Enclosure				
<b>TSV PackMan Boards Fabricated</b>	TSV.3.1 - PackMan Block Diagram Submitted and Approved		50.00%	TSV.3.1 - PackMan Block Diagram Submitted and Approved	50.00%
	TSV.3.2 - First PackMan PCB Circuit Schematic Complete and Approved			TSV.3.2 - First PackMan PCB Circuit Schematic Complete and Approved	
	TSV.3.3 - First PackMan PCB Layout Complete and Approved			TSV.3.3 - First PackMan PCB Layout Complete and Approved	
	TSV.3.4 - PackMan PCB Purchase Order Approved and Submitted			TSV.3.4 - PackMan PCB Purchase Order Approved and Submitted	
	TSV.3.5 - First PackMan PCB Parts List Purchase Order Approved and Submitted			TSV.3.5 - First PackMan PCB Parts List Purchase Order Approved and Submitted	
	TSV.3.6 - First PackMan PCB Acquired			TSV.3.6 - First PackMan PCB Acquired	
	TSV.3.7 - First PackMan PCB Mount Mechanical Drawing Submitted to Machine Shop			TSV.3.9 - First PackMan PCB Populated and Tested	
	TSV.3.8 - First PackMan PCB Mount Fabricated and Acquired				
	TSV.3.9 - First PackMan PCB Populated and Tested				
	TSV.3.10 - First PackMan PCB Debugged and Complete				
	TSV.3.11 - First PackMan PCB Installed on Mount in Rack in Dyno Room				
	TSV.3.12 - PackMan Schematic Revised				
	TSV.3.13 - PackMan Layout Revised				
	TSV.3.14 - Remaining PackMan PCB Purchased and Acquired				
	TSV.3.15 - Remaining PackMan PCB Populated and Debugged				
	TSV.3.16 - PackMen Installed in Enclosure				
<b>TSV SegMan Boards Fabricated</b>	TSV.2.1 - First SegMan PCB Circuit Schematic Complete and Approved	TSV.2.9 - First SegMan PCB Debugged and Complete	46.67%	TSV.2.1 - First SegMan PCB Circuit Schematic Complete and Approved	40.00%
	TSV.2.2 - First SegMan PCB Layout Complete and Approved			TSV.2.2 - First SegMan PCB Layout Complete and Approved	
	TSV.2.3 - First SegMan PCB Purchase Order Approved and Submitted			TSV.2.3 - First SegMan PCB Purchase Order Approved and Submitted	
	TSV.2.4 - SegMan PCB Parts List Purchase Order Approved and Submitted			TSV.2.4 - SegMan PCB Parts List Purchase Order Approved and Submitted	
	TSV.2.5 - First SegMan PCB Acquired			TSV.2.5 - First SegMan PCB Acquired	
	TSV.2.6 - First SegMan PCB Mount Mechanical Drawing Submitted to Machine Shop			TSV.2.8 - First SegMan PCB Populated and Tested	
	TSV.2.7 - First SegMan PCB Mount Fabricated and Acquired				
	TSV.2.8 - First SegMan PCB Populated and Tested				
	TSV.2.9 - First SegMan PCB Debugged and Complete				
	TSV.2.10 - First SegMan PCB Installed on Mount in Rack in Dyno Room				
	TSV.2.11 - SegMan Schematic Revised				
	TSV.2.12 - SegMan Layout Revised				
	TSV.2.13 - Remaining SegMan PCBs Purchased and Acquired				
	TSV.2.14 - Remaining SegMan PCBs Populated and Debugged				
	TSV.2.15 - SegMen Installed in Enclosure				
<b>TSV Firmware Written</b>	TSV.8.7 - Cell Characterization Software Written and Debugged	TSV.9.2 - Firmware Logic / State Machine Delivered and Approved	37.50%	TSV.9.3 - Firmware I/O Functionality Delivered	25.00%
	TSV.8.8 - Cells Characterized			TSV.9.4 - Communication with SCADA via CANBus Complete	
	TSV.8.9 - Implement State of Charge Algorithm				
	TSV.8.10 - Incorporate Cell Characterization with SOC Algorithm				
	TSV.9.1 - Firmware Block Diagram Delivered and Approved				
	TSV.9.2 - Firmware Logic / State Machine Delivered and Approved				
	TSV.9.3 - Firmware I/O Functionality Delivered				
	TSV.9.4 - Communication with SCADA via CANBus Complete				

Integration Task	Related WBS Items	In Progress WBS Items	Projected Completion (%)	Completed WBS Items	Actual Completion (%)
SCADA Recording Data and Writing to a File	SCADA.1.2 - SCADA Collecting Data From Subsystems and Writing Data to File SCADA.1.3 - SCADA Writing Raw and Calibrated Data to Database	SCADA.5.2 - VSCADA Receiving Data from Cooling System	100.00%	SCADA.1.2 - SCADA Collecting Data From Subsystems and Writing Data to File SCADA.1.3 - SCADA Writing Raw and Calibrated Data to Database	85.71%
	SCADA.2.2 - VSCADA Receiving Data from TSI Sensors SCADA.3.2 - SCADA Receiving Data from GLV Sensors SCADA.4.2 - VSCADA Receiving Data from MCS Sensors SCADA.5.2 - VSCADA Receiving Data from Cooling System SCADA.7.3 - SCADA Logging Data with Timestamps			SCADA.2.2 - VSCADA Receiving Data from TSI Sensors SCADA.3.2 - VSCADA Receiving Data from GLV Sensors SCADA.4.2 - VSCADA Receiving Data from MCS Sensors SCADA.7.3 - SCADA Logging Data with Timestamps	
SCADA Displaying Data to Rack Monitor in Dyno Room	SCADA.1.1 - Individual Data Acquisition Tests Performed Showing Data SCADA.1.2 - SCADA Collecting Data From Subsystems and Writing Data to File SCADA.1.3 - SCADA Writing Raw and Calibrated Data to Database SCADA.1.4 - Demo of SCADA Collecting Data and Displaying Meaningfully to Viewer	None	75.00%	SCADA.1.2 - SCADA Collecting Data From Subsystems and Writing Data to File SCADA.1.3 - SCADA Writing Raw and Calibrated Data to Database SCADA.1.4 - Demo of SCADA Collecting Data and Displaying Meaningfully to Viewer	75.00%
SCADA Communicating with GLV in Dyno Room	SCADA.3.1 - VSCADA and GLV Connected via CAN and GPIO SCADA.3.2 - VSCADA Receiving Data from GLV Sensors SCADA.3.3 - VSCADA Sends Warnings for Error Sensor Data GLV.1.7 - GLV BoB Installed on Mount in Rack in Dyno Room		100.00%	SCADA.3.1 - VSCADA and GLV Connected via CAN and GPIO SCADA.3.2 - VSCADA Receiving Data from GLV Sensors SCADA.3.3 - VSCADA Sends Warnings for Error Sensor Data GLV.1.7 - GLV BoB Installed on Mount in Rack in Dyno Room	100.00%
SCADA Communicating with TSI in Dyno Room	SCADA.2.1 - VSCADA and TSI Connected via CAN SCADA.2.2 - VSCADA Receiving Data from TSI Sensors SCADA.2.3 - VSCADA Transmitting Cruise Control Information TSI.1.13 - TSI Installed on Mount in Dyno Room	SCADA.2.2 - VSCADA Receiving Data from TSI Sensors	75.00%	SCADA.2.1 - VSCADA and TSI Connected via CAN TSI.1.13 - TSI Installed on Mount in Dyno Room	50.00%
SCADA Communicating with Motor Controller in Dyno Room	SCADA.4.1 - VSCADA and MCS Connected via CAN SCADA.4.2 - VSCADA Receiving Data from MCS Sensors SCADA.4.3 - SCADA Outputs a Throttle Control to the Motor Controller PART.4.2 - Motor Controller Acquired	SCADA.4.3 - SCADA Outputs a Throttle Control to the Motor Controller	100.00%	PART.4.2 - Motor Controller Acquired SCADA.4.1 - VSCADA and MCS Connected via CAN SCADA.4.2 - VSCADA Receiving Data from MCS Sensors	75.00%
SCADA Communicating with TSV in Dyno Room	SCADA.4.1 - VSCADA and TSV Connected via CAN SCADA.4.2 - VSCADA Receiving Data From TSV Sensors SCADA.4.3 - VSCADA Sends Warning for Error Sensor Data	None	33.33%	SCADA.4.1 - VSCADA and TSV Connected via CAN	33.33%
SCADA Displaying Data to GLV Screen	SCADA.3.1 - VSCADA and GLV Connected via CAN and GPIO SCADA.3.2 - VSCADA Receiving Data from GLV Sensors SCADA.3.3 - VSCADA Sends Warnings for Error Sensor Data GLV.1.7 - GLV BoB Installed on Mount in Rack in Dyno Room GLV Enclosure Complete SCADA Communicating with the GLV in Enclosure	None	100.00%	SCADA.3.1 - VSCADA and GLV Connected via CAN and GPIO SCADA.3.2 - VSCADA Receiving Data from GLV Sensors SCADA.3.3 - VSCADA Sends Warnings for Error Sensor Data GLV.1.7 - GLV BoB Installed on Mount in Rack in Dyno Room GLV Enclosure Complete SCADA Communicating with the GLV in Enclosure	100.00%

Integration Task	Related WBS Items	In Progress WBS Items	Projected Completion (%)	Completed WBS Items	Actual Completion (%)
Dyno Room Testing Plan Complete	TEST.1.1 - List of tests to be performed on motor detailed with specific desired outcomes printed TEST.1.2 - Risk assessment of each test for motor produced with solution plan for failure TEST.2.1 - List of tests to be performed on GLV detailed with specific desired outcomes printed TEST.2.2 - Risk assessment of each test for GLV produced with solution plan for failure TEST.3.1 - List of tests to be performed on TSI detailed with specific desired outcomes printed TEST.3.2 - Risk assessment of each test for TSI produced with solution plan for failure TEST.5.1 - List of tests to be performed on SCADA detailed with specific desired outcomes printed TEST.5.2 - Risk assessment of each test for SCADA produced with solution plan for failure TEST.6.1 - List of tests to be performed on Full Dyno detailed with specific desired outcomes printed TEST.6.2 - Risk assessment of each test for Full Dyno produced with solution plan for failure	TEST.1.1 - List of tests to be performed on motor detailed with specific desired outcomes printed and posted in Test Plan Binder TEST.1.2 - Risk assessment of each test for motor produced with solution plan for failure TEST.2.1 - List of tests to be performed on GLV detailed with specific desired outcomes printed and posted in Test Plan Binder TEST.2.2 - Risk assessment of each test for GLV produced with solution plan for failure TEST.3.1 - List of tests to be performed on TSI detailed with specific desired outcomes printed and posted in Test Plan Binder TEST.3.2 - Risk assessment of each test for TSI produced with solution plan for failure TEST.5.1 - List of tests to be performed on SCADA detailed with specific desired outcomes printed and posted in Test Plan Binder TEST.5.2 - Risk assessment of each test for SCADA produced with solution plan for failure TEST.6.2 - Risk assessment of each test for Full Dyno produced with solution plan for failure	100.00%	TEST.6.1 - List of tests to be performed on Full Dyno detailed with specific desired outcomes printed and posted in Test Plan Binder	10.00%
Dyno Room Wiring Diagram Complete	WIRE.1.1 - Dyno Room Wiring Diagram Complete WIRE.1.2 - Dyno Room Wiring Diagram Printed and Posted in AEC 400 WIRE.1.3 - Dyno Room Wiring Diagram Printed and Posted in AEC 134	None	100.00%	WIRE.1.1 - Dyno Room Wiring Diagram Complete WIRE.1.2 - Dyno Room Wiring Diagram Printed and Posted in AEC 400 WIRE.1.3 - Dyno Room Wiring Diagram Printed and Posted in AEC 134	100.00%
All Connecting Wires Produced with Correct Connector Types	WIRE.2.1 - Full Wiring BOM Submitted and Approved WIRE.2.2 - Full Wiring BOM Purchase Order Submitted and Approved WIRE.2.3 - TSI - MCS Wires Complete WIRE.2.4 - TSI - Cooling Wires Complete WIRE.2.5 - TSI - Pedal Throttle Fixture Wires Complete WIRE.2.6 - TSI - Test Panel Wires Complete WIRE.2.8 - GLV - Safety Loop Wires Complete WIRE.2.9 - GLV - TSI Wires Complete WIRE.2.10 - GLV - Cooling Wires Complete WIRE.2.12 - Safety Loop Panels - Dyno Supply Wires Complete		100.00%	WIRE.2.1 - Full Wiring BOM Submitted and Approved WIRE.2.2 - Full Wiring BOM Purchase Order Submitted and Approved WIRE.2.3 - TSI - MCS Wires Complete WIRE.2.4 - TSI - Cooling Wires Complete WIRE.2.5 - TSI - Pedal Throttle Fixture Wires Complete WIRE.2.6 - TSI - Test Panel Wires Complete WIRE.2.8 - GLV - Safety Loop Wires Complete WIRE.2.9 - GLV - TSI Wires Complete WIRE.2.10 - GLV - Cooling Wires Complete WIRE.2.12 - Safety Loop Panels - Dyno Supply Wires Complete	100.00%
All Subsystems fully wired in Dyno Room	WIRE.3.1 - TSI - MCS Connected WIRE.3.2 - TSI - Cooling Connected WIRE.3.3 - TSI - Pedal Throttle Fixture Connected WIRE.3.4 - TSI - Test Panel Connected WIRE.3.6 - GLV - Safety Loop Connected WIRE.3.7 - GLV - TSI Connected WIRE.3.8 - GLV - Cooling Connected WIRE.3.10 - Safety Loop Panels - Dyno Supply Connected WIRE.3.12 - MCS and Motor Connected WIRE.3.13 - Cooling System and Motor Connected WIRE.3.14 - Cooling System and MCS Connected		100.00%	WIRE.3.1 - TSI - MCS Connected WIRE.3.2 - TSI - Cooling Connected WIRE.3.3 - TSI - Pedal Throttle Fixture Connected WIRE.3.4 - TSI - Test Panel Connected WIRE.3.6 - GLV - Safety Loop Connected WIRE.3.7 - GLV - TSI Connected WIRE.3.8 - GLV - Cooling Connected WIRE.3.10 - Safety Loop Panels - Dyno Supply Connected WIRE.3.12 - MCS and Motor Connected WIRE.3.13 - Cooling System and Motor Connected WIRE.3.14 - Cooling System and MCS Connected	100.00%
All Tests According to Test Plan Run in Dyno Room	TEST.1.3 - Tests performed on motor according to testing plan TEST.1.4 - Testing Analysis of Motor Testing Data complete and submitted TEST.1.5 - Retesting of Motor following adjustments to meet desired test outcomes TEST.2.3 - Tests performed on GLV according to testing plan TEST.2.4 - Testing Analysis of GLV Testing Data complete and submitted TEST.2.5 - Retesting of GLV following adjustments to meet desired test outcomes TEST.3.3 - Tests performed on TSI according to testing plan TEST.3.4 - Testing Analysis of TSI Testing Data complete and submitted TEST.3.5 - Retesting of TSI following adjustments to meet desired test outcomes TEST.5.3 - Tests performed on SCADA according to testing plan TEST.5.4 - Testing Analysis of SCADA Testing Data complete and submitted TEST.5.5 - Retesting of SCADA following adjustments to meet desired test outcomes TEST.6.3 - Tests performed on Full Dyno according to testing plan TEST.6.4 - Testing Analysis of Full Dyno Testing Data complete and submitted TEST.6.5 - Retesting of Full Dyno following adjustments to meet desired test outcomes	TEST.1.3 - Tests performed on motor according to testing plan TEST.1.4 - Testing Analysis of Motor Testing Data complete and submitted TEST.1.5 - Retesting of Motor following adjustments to meet desired test outcomes TEST.2.3 - Tests performed on GLV according to testing plan TEST.2.4 - Testing Analysis of GLV Testing Data complete and submitted TEST.2.5 - Retesting of GLV following adjustments to meet desired test outcomes TEST.3.3 - Tests performed on TSI according to testing plan TEST.3.4 - Testing Analysis of TSI Testing Data complete and submitted TEST.3.5 - Retesting of TSI following adjustments to meet desired test outcomes TEST.5.3 - Tests performed on SCADA according to testing plan TEST.5.4 - Testing Analysis of SCADA Testing Data complete and submitted TEST.5.5 - Retesting of SCADA following adjustments to meet desired test outcomes TEST.6.3 - Tests performed on Full Dyno according to testing plan TEST.6.4 - Testing Analysis of Full Dyno Testing Data complete and submitted TEST.6.5 - Retesting of Full Dyno following adjustments to meet desired test outcomes	100.00%		0.00%