

Project Status Letter Week 13

Covering Period from 11/18/2018 to 11/25/2018

Prepared by Alex Kmetz and Katie Lee

DYNO Integration Action Tracking

Motor Spinning in Dyno Room	50.00%	50.00%	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%	100%	Yes	
Motor Controller Purchased	100%	100%	Yes	
Motor Controller Connected to TSI, Cooling, and Motor in Dyno Room	50.00%	33.30%	No	Motor Controller Purchased MCS / TSI / Cooling Fixture Fabricated TSI Board Complete TSI Mounting Plate Complete
Motor Mount Fabricated	67%	33%	No	
Motor Installed in Motor Mount in Dyno Room	66.67%	50.00%	No	Motor Purchased Motor Mount Fabricated
Pulley / Shaft Fabricated	80%	60%	No	
Pulley / Shaft Connected to Motor and Mounted in Dyno Room	63.64%	45.45%	No	Motor Purchased Pulley / Shaft Fabricated
MCS / TSI / Cooling Fixture Fabricated	100%	33%	No	
Dyno Room Testing Plan Complete	100%	100%	Yes	
Dyno Room Wiring Diagram Complete	100%	100%	Yes	
GLV Board Manufactured	85.71%	85.71%	No	
GLV Mounting Plate Manufactured	66.67%	66.67%	No	
Safety Loop Testing Panel Mounted in Dyno Room Rack	100%	75%	No	
Safety Loop Functional In Dyno Room	17%	0%	No	GLV Board Manufactured
TSI Board Manufactured	64.29%	50.00%	No	
TSI Mounting Plate Manufactured	66.67%	67%	No	
TSI Throttle / Brake Control Panel Manufactured	71.34%	28.57%	No	TSI Board Manufactured TSI Mounting Plate Manufactured
Cooling Loop Filled with Water and Tested For	66.67%	66.67%	No	

Leaks				
Cooling System Mounted on Fixture in Dyno Room	100%	50%	No	MCS / TSI / Cooling Fixture Fabricated
Cooling System Connected to MCS and Motor in Dyno Room	63%	50%	No	MCS / TSI / Cooling Fixture Fabricated
Cooling System Connected to TSI in Dyno Room	80%	20%	No	MCS / TSI / Cooling Fixture Fabricated
TSV Packs Manufactured	30%	10%	No	
TSV Packs Connected to Motor Controller in Dyno Room	0%	0%	No	
TSV CellMan Boards Fabricated	33%	22%	No	
TSV PackMan Boards Fabricated	25%	0%	No	
TSV SegMan Boards Fabricated	29%	0%	No	
				TSV Packs Manufactured PackMan Boards Fabricated CellMen Boards Fabricated SegMen Boards Fabricated Motor Controller Purchased Motor Purchased
TSV Powering Motor via Motor Controller	0%	0%	No	
SCADA Recording Data and Writing to a File	75.00%	38%	No	
SCADA Displaying Data to Rack Monitor in Dyno Room	75%	75%	No	
SCADA Communicating with GLV in Dyno Room	50%	0%	No	GLV Board and Mounting Plate Integrated
SCADA Communicating with TSI in Dyno Room	50%	25%	No	TSI Board and Mounting Plate Integrated
				TSV Packs Manufactured PackMan Boards Fabricated CellMen Boards Fabricated SegMen Boards Fabricated
SCADA Communicating with TSV in Dyno Room	0%	0%	No	
SCADA Communicating with Motor Controller in Dyno Room	50%	50%	No	
All Connecting Wires Produced with Correct Connector Types	17%	8%	No	
All Subsystems fully wired in Dyno Room	0%	0%	No	Dyno Room Wiring Diagram Complete
All Tests According to Test Plan Run in Dyno Room	0%	0%	No	Dyno Room Testing Plan Complete
				Motor Purchased Motor Controller Purchased
Motor Spinning in Dyno Room	50.00%	50.00%	No	

				Pulley / Shaft Fabricated Motor Installed in Motor Mount MCS Installed in Fixture Pulley / Shaft Connected to Motor
Motor Purchased	100%	100%	Yes	

For more data, visit website using link below:

https://sites.lafayette.edu/motorsports/files/2018/11/Week_13_DYNO_Progress.pdf

Project Item Completion Chart:

Team	Tasks Completed	Tasks Planned for Next Week	Proposed Changes	Overdue WBS Items
VSCADA	<p>Zian: SCADA.7.2 - RTC Integrated with SCADA</p>	<p>Sam: SCADA.3.1 - VSCADA and GLV Connected via CAN and GPIO</p> <p>SCADA.3.2 - VSCADA Receiving Data from GLV Sensors</p> <p>Zian: SCADA.5.1 - VSCADA and Cooling System Connected via CAN</p> <p>SCADA.3.2 - VSCADA Receiving Data from GLV Sensors</p> <p>SCADA.7.3 - SCADA Logging Data with Timestamps</p> <p>Yuqiu: SCADA.2.1 - VSCADA Communicating with TSI over CAN</p>	none	<p>Sam: SCADA.3.1 - VSCADA and GLV Connected via CAN and GPIO</p> <p>SCADA.3.2 - VSCADA Receiving Data from GLV Sensors</p> <p>Yuqiu: SCADA.2.1 - VSCADA Communicating with TSI over CAN</p>
TEST	<p>Alex: TEST.6.1 - DYNO Integration Testing Plan</p> <p>Katie: TEST.6.1 - DYNO Integration Testing Plan</p>	<p>Hayden: TEST.1.1 - Motor Testing Plan</p> <p>TEST.2.1 - GLV Testing Plan</p> <p>TEST.3.1 - TSI Testing Plan</p> <p>TEST.4.1 - TSV Testing Plan</p> <p>TEST.5.1 - SCADA Testing Plan</p>	none	<p>Hayden: TEST.1.1 - Motor Testing Plan</p> <p>TEST.2.1 - GLV Testing Plan</p> <p>TEST.3.1 - TSI Testing Plan</p> <p>TEST.4.1 - TSV Testing Plan</p> <p>TEST.5.1 - SCADA Testing Plan</p>

		<p>TEST.6.1 - DYNO Integration Testing Plan</p> <p>Katie: TEST.6.2 - Full DYNO Risk Assessment</p>		<p>TEST.6.1 - DYNO Integration Testing Plan</p>
GLV	<p>Robson: GLV.2.9 - Left Side Panel Installed in Dyno Room</p> <p>GLV.2.10 - Right Side Panel Installed in Dyno Room</p> <p>GLV.6.5 - Dashboard Panel Installed in Dyno Room</p>	<p>Max: GLV.1.7 - GLV BoB Installed on Mount in Rack in DYNO Room</p> <p>Robson: GLV.3.2 - Dyno Power Supply Safety Loop On/Off Mechanism Delivered</p> <p>GLV.3.3 - Left Side Panel Connected to GLV In Dyno Room</p> <p>GLV.3.4 - Right Side Panel Connected to GLV In Dyno Room</p> <p>GLV.3.5 - Dyno Power Supply Connected to GLV Safety Loop</p>	none	<p>Max: GLV.3.2 - Dyno Power Supply Safety Loop On/Off Mechanism Delivered</p> <p>GLV.3.3 - Left Side Panel Connected to GLV In Dyno Room</p> <p>GLV.4.3 - GLV External Wiring Delivered and Accepted</p> <p>Robson: GLV.3.1 - Dyno Safety Loop Block Diagram Complete and Submitted</p> <p>GLV.3.2 - Dyno Power Supply Safety Loop On/Off Mechanism Delivered</p> <p>GLV.3.3 - Left Side Panel Connected to GLV In Dyno Room</p> <p>GLV.3.4 - Right Side Panel Connected to GLV In Dyno Room</p> <p>GLV.3.5 - Dyno Power Supply Connected to GLV Safety Loop</p>

				<p>GLV.2.9 - Left Side Panel Installed in Dyno Room</p> <p>GLV.2.10 - Right Side Panel Installed in Dyno Room</p> <p>GLV.6.5 - Dashboard Panel Installed in Dyno Room</p>
TSI	<p>Tianyu: TSI.1.8 - Precharge Circuitry Incorporated</p> <p>TSI.1.3 - TSI PCB Layout Complete and Approved</p> <p>Yuqiu: TSI.1.3 - TSI PCB Layout Complete and Approved</p>	<p>Tianyu: TSI.1.11 - TSI Mounting Plate Mechanical Drawing Submitted</p> <p>Antonio: TSI.5.8 - TSI ICD Delivered</p> <p>TSI.5.9 - TSI Wiring Diagram Delivered</p> <p>Hongbo: TSI.2.4 - UART for firmware completed</p> <p>TSI.2.6 - TSI Firmware state machine completed</p> <p>Yuqiu: TSI.1.5 - TSI PCB Purchased and Delivered</p> <p>TSI.1.6 - TSI PCB Populated and Verified</p> <p>TSI.2.9 - VSCADA I2C Communication Complete</p> <p>TSI.2.11 -</p>	none	<p>Tianyu: TSI.1.11 - TSI Mounting Plate Mechanical Drawing Submitted</p> <p>TSI.6.1 - Mechanical Drawing of TSI Enclosure Delivered and Approved</p> <p>Antonio: TSI.5.8 - TSI ICD Delivered</p> <p>TSI.5.9 - TSI Wiring Diagram Delivered</p> <p>Yuqiu: TSI.2.5 - Firmware Logic / State Machine Delivered and Approved</p> <p>TSI.2.9 - VSCADA I2C Communication Complete</p> <p>TSI.2.11 - CANBus / TSI Integration Complete</p>

		<p>CANBus / TSI Integration Complete</p> <p>Yishak: TSV.3.1 - Verify and correct 2018 Block and Wiring Diagram</p>		
TSV		<p>Hayden: TSV.1.2 - Pack Mechanical Drawing Submitted and Accepted</p> <p>TSV.3.1 - PackMan Block Diagram Delivered and Approved</p> <p>TSV.3.2 - PackMan Circuit Schematic Delivered and Approved</p> <p>Yishak: TSV.1.1 - Pack High Level Electrical Block Diagram Delivered and Accepted</p> <p>TSV.1.3 - Pack BoM Purchase Order Approved and Purchased</p> <p>TSV.4.1 - SegMan Block Diagram Delivered and Approved</p> <p>TSV.3.1 - PackMan Block Diagram Delivered and Approved</p> <p>Weston: TSV.3.1 - PackMan Block Diagram Submitted and Approved</p>	none	<p>Alex: TSV.3.1 - PackMan Block Diagram Delivered</p> <p>Hayden: TSV.4.1 - PackMan Block Diagram Delivered and Approved</p> <p>TSV.4.2 - PackMan Circuit Schematic Submitted and Accepted</p> <p>Yishak: TSV.1.1 - Pack High Level Electrical Block Diagram Delivered and Accepted</p> <p>TSV.1.3 - Pack BoM Purchase Order Approved and Purchased</p> <p>TSV.2.1 - CellMan Block Diagram Delivered and Approved</p> <p>TSV.2.4 - CellMen BoM Purchase Order Approved and Purchased</p> <p>TSV.4.1 - SegMan Block Diagram Delivered and Approved</p>

		<p>Alex: TSV.3.1 - PackMan Block Diagram Delivered</p>		<p>Weston: TSV.1.2 - Pack BoM Purchase Order Approved and Purchased</p> <p>TSV.1.6 - Pack Testing Plan Submitted and Approved</p> <p>TSV.3.1 - PackMan Block Diagram Delivered</p>
Cooling	<p>Hongbo: COOL.4.7 - Cooling Connected to Safety Loop</p>	<p>Hongbo: COOL.1.4 - Controller Algorithm Delivered and Approved</p> <p>COOL.4.2 - Cooling Wiring Diagram Delivered</p>	none	<p>Hongbo: COOL.1.4 - Controller Algorithm Delivered and Approved</p> <p>COOL.4.2 - Cooling Wiring Diagram Delivered</p>
Interconnect		<p>Drew: WIRE.2.3 - TSI-MCS Wires Complete</p> <p>WIRE.2.4 - TSI-Cooling Wires Complete</p> <p>Hayden: WIRE.2.3 - TSI-MCS Wires Complete</p>	none	<p>Drew: WIRE.2.3 - TSI-MCS Wires Complete</p> <p>WIRE.2.4 - TSI-Cooling Wires Complete</p> <p>WIRE.2.12 - Safet Loop Panels - Dyno Supply Wiress Complete</p>
Mech	<p>Brian: Took inventory of aluminum for battery pack frame</p> <p>Updated battery pack design and model</p>	<p>Brian: Order aluminum</p> <p>Create part drawings for battery pack frame</p>	none	none
Management	none	<p>Alex: M.1.4 - Program Submission</p> <p>M.4.4 - Posters Delivered</p>	none	none

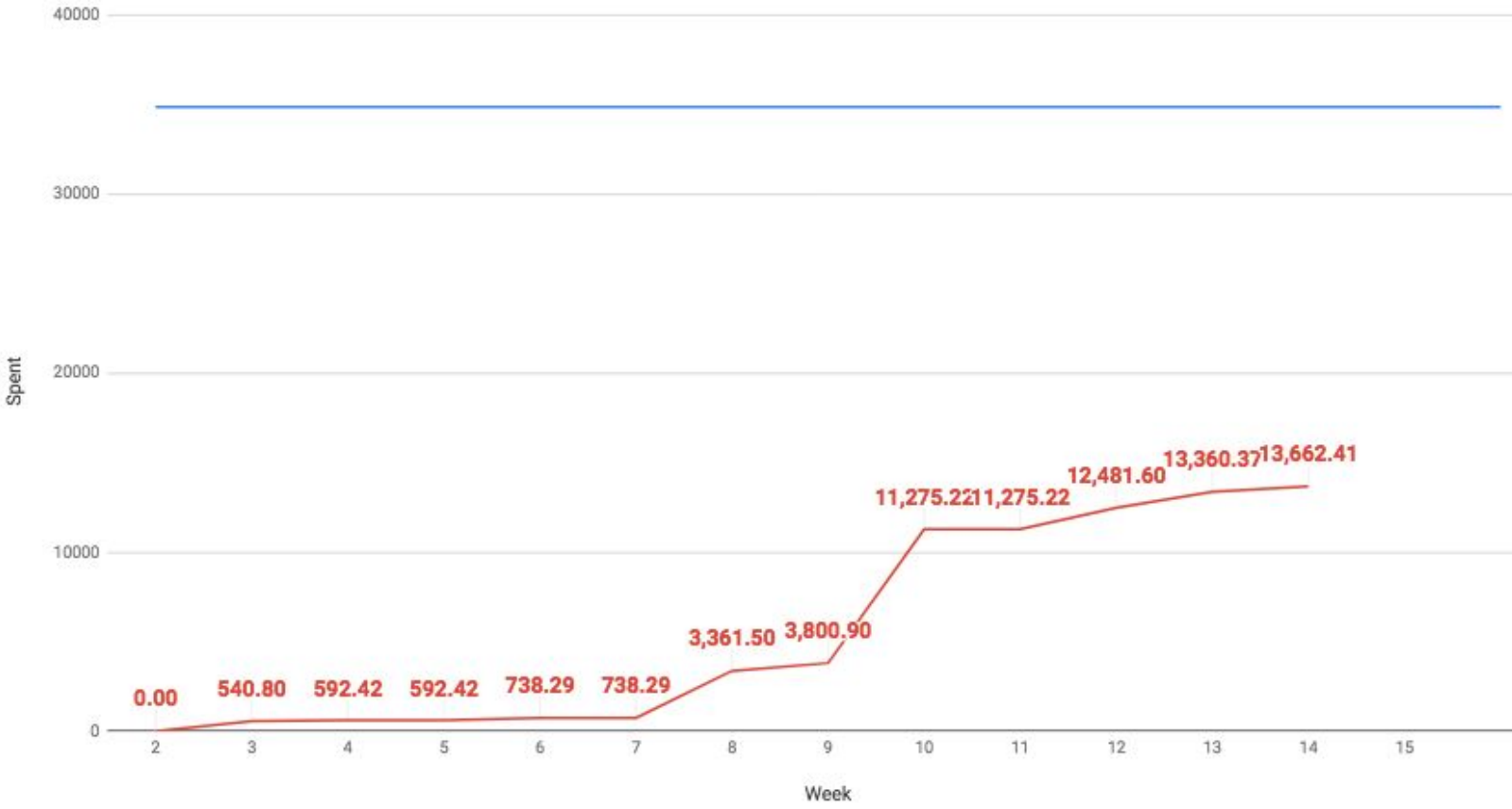
		<p>Update WBS to better reflect SMART goals</p> <p>Katie: M1.5 - Team Photo</p> <p>Update WBS to better reflect SMART goals</p>		
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Purchasing Summary from Previous Week:

Sub-system	Allocated Budget	Total Spent	Budget Remaining	Percentage Spent
Brakes	3,500.00	0.00	3,500.00	0.00%
Chassis/Body	5,000.00	0.00	5,000.00	0.00%
Cooling	620.00	17.17	602.83	2.77%
GLV	780.00	914.81	-134.81	117.28%
Interconnect	1,500.00	842.55	657.45	56.17%
Motor	4,000.00	3,823.43	176.57	95.59%
Pedal/Controls	2,000.00	0.00	2,000.00	0.00%
Steering	2,500.00	0.00	2,500.00	0.00%
Suspension	2,200.00	0.00	2,200.00	0.00%
TSI/MCS	1,500.00	4,079.41	-2,579.41	271.96%
TSV	4,187.00	1,112.84	3,074.16	26.58%
VSCADA / DYNO	525.00	87.67	437.33	16.70%
Shipping/Tax	4,246.80	484.53	3,762.27	11.41%
Registration	2,300.00	2,300.00	0.00	100.00%
Overall	34,858.80	13,662.41	21,196.39	39.19%

Total Spent vs. Week

— Max Budget — Total Spent



Purchase Orders:

11/19/2018		ECE Department Material Request						
Course: ECE 491						Req Number: 25		
Professor: Nadovich								
Requested By						Vendor: www.mcmaster.com		
Name: Robson Adem						Web Site: www.mcmaster.com		
Email: ademr@lafayette.edu						Phone:		
Phone: 4845919265						Ship By: Ground		
#	Quantity	Vendor Part	Description	Unit Price	Total Price	Rcvd		
1	1	7243K21	single crip, 16-14 awg 50 pack female	\$14.39	\$14.39	11/20/2018		
2	1	7243K22	single crip, 16-14 awg 50 pack male	\$15.08	\$15.08	11/20/2018		
3	4	8505K722	1/8 in 12inx24in grey acrylic	\$14.27	\$57.08	11/20/2018		
					Shipping Fees		\$7.00	
					Grand Total:		\$93.55	
Instructor Approval:								
Department Approval: (Over \$500)								

11/19/2018		ECE Department Material Request						
Course: ECE 491						Req Number: 26		
Professor: Nadovich								
Requested By						Vendor: Advanced Circuits		
Name: Yuqiu Zhang						Web Site: https://www.4pcb.com/		
Email: zhangyu@lafayette.edu						Phone: 1.800.979.4722		
Phone: 717-882-6143						Ship By: Ground		
#	Quantity	Vendor Part	Description	Unit Price	Total Price	Rcvd		
1	1	TSI2019 V1	TSI BOARD 2019	\$33.00	\$33.00			
					Shipping Fees		\$98.32	
					Grand Total:		\$131.32	
Instructor Approval:								
Department Approval: (Over \$500)								

11/20/2018		ECE Department Material Request			
Course: ECE 491 Professor: Pro. Nadovich		Req Number: 27			
Requested By Name Robson Adem Email ademr@lafayette.edu Phone 4845919265		Vendor: Amazon Web Site: amazon.com Phone: 5105252328 Ship By: Ground			
All items added to shopping cart Link: http://a.co/4auqClz					
#	Quantity	Description	Unit Price	Total Price	Revd
1	1	AmazonBasics High-Speed HDMI Cable, 10 Feet, 1-Pack	\$7.99	\$7.99	
2	1	[2 Packs] iXCC 10 Feet Long Micro USB to USB 2.0 Cable	\$7.99	\$7.99	
3	1	TNP USB 3.0 Flush Mount Cable	\$9.99	\$9.99	
4	2	40pin Male to Female, 40pin Male to Male, 40pin Female to Female for Breadboard/Arduino Based/DIY/Robot Ribbon Cables Kit	\$6.99	\$13.98	
5	1	ShineKee USB HDMI Mount Cable 2 Ports USB 3.0 HDMI	\$11.90	\$11.90	
				Shipping Fees	\$0.00
				Grand Total:	\$51.83
Instructor Approval:					
Department Approval: (Over \$500)					

11/20/2018		ECE Department Material Request				
Course: ECE 491 Professor: Pro. Nadovich		Req Number: 31				
Requested By Name Robson Adem Email ademr@lafayette.edu Phone 4845919265		Vendor: Mouser Web Site: mouser.com Phone: Ship By: Ground				
#	Quantity	Part #	Description	Unit Price	Total Price	Revd
1	3	584-AD5593RBRUZ	Data Acquisition ADCs/DACs - Specialized Configurable ADC/DAC	\$7.48	\$22.44	
2	3	538-171692-0106	Headers & Wire Housings Mega-Fit Recept Hsg 6 ckt V-0	\$0.96	\$2.88	
				Shipping Fees	\$0.00	
				Grand Total:	\$25.32	
Instructor Approval:						
Department Approval: (Over \$500)						

NOTICE: The following orders, although included in last week's PSL(12th week for convenience), were made on different dates as shown below.

PO #28 10/17/2018 - 8th week

PO #29 11/06/2018 - 11th week

PO #30 11/06/2018 - 11th week

A copy of each of the POs above is included below.

2018-19 PURCHASE REQUEST FORM							
Class/Project Name:		FSAE-Racecar					
Account #:							
Advisor Approval:		Nesbit/Nadovich/Nestor					
Vendor Order Information							
PO_28							
Date:	10/17/2018					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		
0							
ORDER INFORMATION							
#	Qty	Unit	Part #	Description	Unit Price	Price	
1	1	Pack	90272A096	Steel Pan Head Phillips Screws, 3-48 Thread, 1/2" Long	\$8.00	\$8.00	
2	1	Pack	94639A470	White Nylon Unthreaded Spacer, 3/16" OD, 5/32" Long, #4 Screw S	\$3.62	\$3.62	
3	1	Pack	90272A192	Steel Phillips Screws 8-32, 3/8" Long	\$2.92	\$2.92	
					Shipping	\$7.00	
Total						\$21.54	

2018-19 PURCHASE REQUEST FORM							
Class/Project Name:		FSAE-Racecar					
Account #:							
Approved by:		Nesbit/Nadovich/Nestor					
Vendor Order Information							
PO_29							
Date:		11/6/2018		Web/email address:		https://www.midweststeelaluminum.com/	
Vendor Name:		Midwest Steel and Aluminum					
Address:		14255 James Road					
City:		Rogers		State:		MN	
Zip Code:		55374					
Telephone:		763-582-1925		Fax:			
Line	Qty	Unit	Part #	Description	Web Link	Unit Price	Price
1	1	Sheet	6061	1 inch thick 11" x 11" Plate	https://www.midweststeelaluminum.com/ibores/6061aluminumplate	\$58.13	\$58.13
Total							\$58.13

2018-19 PURCHASE REQUEST FORM							
Class/Project Name:		FSAE-Racecar					
Account #:							
Advisor Approval:		Nesbit/Nadovich/Nestor					
Vendor Order Information							
PO_30							
Date:		11/7/2018		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	1	Length	8961K15	Steel DIN 3 Rail, 7.5mm Deep, 1m Long	\$5.27	\$5.27	
2	11	Pack	47065T142	Steel End-Feed Fastener, 1/4"-20 Thread for T-Slotted Framing	\$2.30	\$25.30	
						Shipping	\$7.00
Total							\$37.57