E-Racer

Kevin Arpin, Michael Marquis, Allison Meisner, Travis Ward

Client Contact: Gregg and Laura McClement, Calgary, AB, Canada
Modification Overview

- 5-Point Harness
- Replacement Seat
- Hand Controls
- Mode Select
- Steering modification
- Joystick Control
Work Completed - Summary

- Seat Supports Finalized
- DC Motor Controller Came In and was Built
- More Progress on Pic Programming
- Autodesk training
Work Completed - Allison

- Allison has completed side support assembly
- Confirmed the 35lb linear actuator will be sufficient to apply brakes
- Investigated ways to increase mounting area for several items (braking linear actuator, joystick, etc.)
Completed Work - Mike

- Spent Time Learning Autodesk for Help in Designing Brackets to Mount Steering Linear Actuator
- Helped Allison with Braking to Determine if Linear Actuator we had was Sufficient for the Application
Completed Work - Kevin

- Assembled motor speed controller kit
- Ordered another speed kit for braking
Completed Work - Kevin

- Programmed pic to output PWN signal from CCP1 and CCP2
- Programmed pic to turn on steering wheel mode or joystick mode depending which button is pressed on steering wheel
Completed Work - Travis

- Researched and called several more engineering firms to see if they could produce a LA with our specs
- Went to Home Depot and Ace Hardware looking for box enclosure
- Came up with way to make box enclosure
- Came up with way to keep enclosure dry and dust free
Future Work – next week

- **Allison**
  - Mount braking actuator
  - Adjust braking cables
  - Finish seat/restraint system/go-kart integration
  - Work on joystick armrest and mounting

- **Mike**
  - Continue working with Autodesk tutorials
  - Create computer simulated model of front of vehicle/whole vehicle using Autodesk
  - Help Allison with design and mounting of modified braking system
Kevin
- Program pic for A/D conversion to joystick
- Program PWM output mode for joystick
- Design ramp program for button acceleration

Travis
- Build enclosure and mount motor controller in it
- Add rubber to edges of box and order grommet
- Design attachment from steering column to potentiometer
## Schedule

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check mailbox and new pc</td>
<td>30 mins</td>
<td>Thu 2/14/08</td>
<td>Thu 2/14/08</td>
<td></td>
</tr>
<tr>
<td>Build Speed Controller</td>
<td>3 hrs</td>
<td>Thu 2/14/08</td>
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<tr>
<td>Assemble Seat Sides</td>
<td>4 hrs</td>
<td>Fri 2/15/08</td>
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<tr>
<td>Check out back brakes</td>
<td>1 hr</td>
<td>Fri 2/15/08</td>
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<tr>
<td>Measure Brake Force Need</td>
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<tr>
<td>Increase Mounting Area</td>
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<td>Mon 2/18/08</td>
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<tr>
<td>Learn Autodesk</td>
<td>3 days</td>
<td>Mon 2/18/08</td>
<td>Wed 2/20/08</td>
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<tr>
<td>Design Brackets in Autodesk</td>
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<td>Mon 2/18/08</td>
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<tr>
<td>Tutorials in Autodesk</td>
<td>2 days</td>
<td>Mon 2/18/08</td>
<td>Tue 2/19/08</td>
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<tr>
<td>Call Firms to make LA</td>
<td>1 day</td>
<td>Fri 2/15/08</td>
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<tr>
<td>Research alternative to LA</td>
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<tr>
<td>Ace Visit</td>
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<tr>
<td>Design Box Fabrication</td>
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<td>Find Suitable Materials for</td>
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<tr>
<td>Work on Pic Programming</td>
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<tr>
<td>Work on Pic output PAM</td>
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<tr>
<td>Work on Pic to Joystick</td>
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<tr>
<td>Work on Pic to Accel. Bump</td>
<td>1 day</td>
<td>Tue 2/19/08</td>
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Hours Worked

- Allison: 17 hours
- Michael: 14 hours
- Kevin: 18 hours
- Travis 10 hours
Questions, Comments, Concerns?