**Progress Report: Mapping Robot**

Graham Koob

**Description of project**

Autonomous tracked robot

Maps room

Displays dimensions of room

**Purpose of project**

This project will map a room then output results on a display.

**Operating parameters**

* Pre-built chassis
* Autonomous
* Navigate around an enclosed room
  + See obstacles with ultrasonic sensors
  + React to collisions with bump sensors
* System can map room, and find maximum room dimensions
  + Robot enters room
  + Determines the maximum length and width of room.
* Must be able to map a 1200sq ft room ±300sq ft

**Comparison of alternate designs**

RC Car Chassis

* Cheapest
* Determining distance traveled when turning is hard
* Not designed to have sensors and electronics mounted on it

2 Wheeled Chassis

* Size of available chassis tend to be out of desired range (Too small or large)
* Limited terrain options (smooth floor)

4 Wheeled Chassis

* Expensive
* More complex (control & track 4 wheels)
* Need at least 2 encoders to track accurately
* Have to control 4 motors

Tracked Chassis

* 2 motors & 1 encoder make control and determining distance traveled relatively easy/cheep
* Can use in a variety of environments

**Appendix A - Block diagrams**

**Appendix B - Flowcharts**

**Appendix C - Mechanical drawings**

**Appendix D - Schematic diagrams**

**Appendix E - Bill of materials with a cost of production**

**Appendix F - Gantt chart**