CSCI-P 542, Progress Report 2
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Remote controlled indoor cart using mobile application
Progress Report 2

Overview of Progress

Accomplishments: (1) design and start of implementation of mobile application, (2) design of board, (3) design of a crude interface for the sonar.

Challenges: the main challenge for this stage of the project was to learn how to use EagleCad, and the basic design principles for PCBs, in order to construct a board that fits the requirements of our project. Another challenge was to set up timers for the sonar, which we are still working on.

Barriers to Success: lack of library components for Eagle Cad and lack of working examples for the sonar. Another annoying barrier to success is that we are unable to smoothly run eclipse with the IDE for developing android applications. The computers at the lab seem to freeze whenever we try to run this tool, which limits our ability to code the mobile application.

Profile

Progress per Objective

Category	Design Objective	Deliverable	Status
Power	Battery Availability	Using AA batteries	**50%**
Communication	Wireless communication	Wifi nordic	**0%**
Control Protocol	Control the cart	Design of control and data messages	**100%**
Control Protocol	Control the cart	Design two state machines, one for cart and for control app.	**50%**
Cart	Safe halting	Sonar	**50%**
Cart	Ambient reading	Light sensor	**0%**
User Interface	Mobile control	Mobile Application for	**50%**

		Android. Includes a halt message.	
User Interface	Server control	Terminal application	**0%**
User Interface	Ambient reading	Light readings	**0%**

Milestones

Software

- Mobile Application - 75%
- Server Application - 0%
- Design Communication Protocol - 100%
- Implement Communication Protocol - 55%
- Cart Control Algorithm (movements, safe halting) - 0%

Hardware

- Board Prototyping - 100%
- Board Design - 100%
- Order Components - 0%
- Integration - 0%
- Testing and Debugging - on going process - 0%

As promised on Progress Report 1, we have finished the design of the board.
At this point we need to report that it is unlikely, given the current time frame, that we are going to be able to integrate a light sensor to our project. The progress has just not been fast enough for us to state with confidence that this sensor will be included in the project. However, if we move forward with some of the current issues, we might be able to incorporate such sensor. At this point, however, this seems like a remote possibility.

Our main concern for next week will be to implement the car control algorithm. For this we assume that we are going to have the actual cart by tomorrow or early next week.