

Remote controlled indoor cart using mobile application Progress Report 3

Overview of Progress

Accomplishments: very few accomplishments for this progress report. In general we have quite a few things going on but none completed. In particular, we are working on making the WiFly work, on the sonar and on the mobile application. We don't yet have the cart to start implementing control algorithms on it.

The main accomplishment for this stage of the project was to have communication between the WiFly, via UART, and a client. The next step will be to implement the client for the android app. Right now we have communication from a client with a simple java program sending messages to the wifly which we can read programmatically in the STM32.

Challenges: the main challenge for this stage of the project is to make the wifly communicate via pins on the discovery board. We have made several attempts and move a little bit forward in having this functionality working

Barriers to Success: we don't yet have the cart to work on it. The wifly is very complicated to work from scratch and is giving us a hard time. We are still waiting on Bryce's help for the sonar.

Profile

Progress per Objective

Category	Design Objective	Deliverable	Status
Power	Battery Availability	Using AA batteries	50%
Communication	Wireless communication	WiFly	50%
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% - Probably Won't do it
User Interface	Mobile control	Mobile Application for Android. Includes a halt message.	75%
User Interface	Server control	Terminal application	10%
User Interface	Ambient reading	Light readings	0% - Probably Won't do it

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 - 10%

As stated in last week's report, the main concern was to implement the car control algorithm. However, this was not possible since we don't yet have the cart platform. Instead, we worked on the wifly with partial success. We are also waiting on help for the sonar.

There are only two weeks left on the project. For next week we should have the wifly working so that we can concentrate the remaining of the time on implementing the cart control algorithms (safe halting, movement and so on).