

Elevator Controller for Individual with MS

Client:

Dr. John Fleming

Team Members:

Ashley Matsick (Co-Leader)

Sara Karle (Co-Leader)

Michele Lorenz (Communicator)

Peter Strohm (BWIG)

Alison Boumeester (BSAC)

November 9-16, 2006

Problem Statement:

Our project involves the integration of controls into a device capable of covering the distance from a wheelchair to an elevator call button in the x, y and z directions, then exerting a horizontal force sufficient to successfully push the call buttons in both the standard elevator car and the corresponding hallway. The controls to be integrated must be operable by stimulus generated by movement no lower than the user's neck.

Last Week's Goals:

- Finalize mounting arm design and create cardboard prototype to check measurements with Dave's chair.
- Finalize switches and prepare for mounting and integrating with chair.

Summary of Accomplishments:

- Switch group (Sara & Alison) purchased a new momentary toggle switch and hooked it up to the actuator.
- Switch group brainstormed design for lengthening of toggle switch and obtained scrap metal for this purpose.

This Week's Goals:

- Mounting arm group: Meet with Dave on Friday to test template of mounting arm and troubleshoot prior to building actual arm
- Switch group: Meet with Dave on Friday to determine the final positions where toggle switch and Ultimate switch will be mounted based on user preferences.
- Switch group: Based on mounting location of toggle switch, lengthen toggle lever to appropriate size.
- Switch group: Consider weatherproofing of all switches for mounting on chair.
- Contact Tracy at Meriter Home Health about integration of device with batteries.

Project Difficulties:

The new incorporation of a double pole, double throw toggle switch has eliminated the need for the sip-puff switch that was previously purchased. Michele recently contacted Enabling devices and determined that we will in fact be able to return the unopened switch for a refund.

The project progression has fallen slightly behind the intended timeline due to the necessity of meeting with Dave in order to continue both aspects of the project. Coordinating a meeting at a time when all group members are available is difficult, so the meeting had to be scheduled for this Friday.

Activities:

<u>Date</u>	<u>Person/Group</u>	<u>Activity</u>	<u>Time Spent</u>
11.09.2006	Alison, Sara	Met to look at switches on-line	1.75 hr

11.09.2006	Michele, Ashley, Peter	Finalize dimensions/design of mounting arm	2.00 hr
11.10.2006	Michele, Ashley, Peter	Class time	2.00 hr
11.10.2006	Sara, Alison	Class time, hooked up toggle switch to actuator and found scrap materials for extending switch	3.00 hr
11.11.2006	Ashley	Construction of template	1.00 hr
11.11.2006	Peter	Sketching design with measurements	1.00 hr
11.15.2006	Sara	Progress report	0.50 hr

Budget

<u>Date</u>	<u>Item</u>	<u>Cost</u>	<u>Comments</u>
09.02.2006	Ultimate Switch & Sip-Puff Switch	~\$140.00	Ordered from enablingdevices.com, paid for by Michele
11.01.2006	Double pole, double throw latch toggle switch	\$1.25	Purchased by Sara
11.10.2006	Double pole, double throw momentary toggle switch	\$9.00	Purchased by Alison