

Progress Report 5

2/24/07 – 3/2/07

Project Title: 25. Sensory Substitution Device for Hearing Impairment

Team Members:

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Client:

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Advisor:

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Problem Statement:

The goal is to design and develop an auditory substitution device that through the use of a digital hearing aid and vibro- or electro-tactile stimulation can substitute for regional frequency hearing loss. We will continue the work from last semester, mainly focusing on integrating vibro-transducers into the system and converting the system to real time.

Statement of team goals:

1. Create problem statement
2. Create first draft of PDS

3. Begin to research and develop design ideas
4. Continue the design project
 - a) Research all possible background information.
 - b) Research existing and design alternatives
 - c) Brainstorm for all possible solutions
 - d) Meet with experts to gain ideas about possible solutions
 - e) Develop possible design solutions
5. Choose final three design solutions
6. Develop final three solutions
7. Create Power point presentation
8. Finish mid semester report, PDS
9. Discuss possible final design alternative
10. Finalize Design
11. Build and test prototype
12. Present final design & poster

Project Schedule

- 1/26 – 2/2: Choose project, assign roles, meet with client
- 2/3 – 2/9: Draft first version of PDS, preliminary design ideas to improve prototype
- 2/10 - 2/16: Continue research and write PDS
- 2/17 – 2/23: Decide on design alternatives, brainstorm ideas
- 3/23 – 3/2: Work on design
- 3/3 – 3/9 : Work on presentation and report
- 3/9: Mid-semester oral presentations
- 3/16: Hand in written report, PDS and notebooks
- 3/17 – 3/31: Work on design
- Spring Break
- 4/9 – 4/25: Work on Design, plan tests for the prototype
- 4/26 – 5/4: Work on final poster, presentation and report. Test the prototype and present to client.
- 5/4: Poster presentation

Last week's goal

1. Try to set up a meeting with Tom Crabb about the vibro-transducers
2. Look further into electro-transducers
3. Brainstorm how we can fit electro-transducers into the project in case we cannot get the vibro-transducers
4. Make decisions about prototype
5. Prepare for mid-semester presentation

Summary of Team Accomplishments:

1. Worked in the bioinstrumentation lab setting up and testing last semester's prototype.

2. Jack created and conducted sensitivity experiment on members of our group testing the response of the behind-the-ear region.
3. Divided roles for presentation and mid-semester report
4. Continued research of alternatives and frequency analysis
5. Expanded on goals for the end of semester

Statement of Team Goals for Upcoming Week:

1. Work on mid-semester presentation
2. Test piezoelectric transducers ordered from digikey
3. Look into possible outside help we might require with signal processing/ frequency analysis and electronics.
4. Review product information regarding vibro/tactile, electro tactile from companies

Difficulties:

Getting in touch with Tom Crabb

Activities and Individual Accomplishments:

Team In-class/lab meeting (1 hour)

Wednesday night meeting in lab - Testing of old prototype, sensitivity of behind-ear region (2 hours)

Jimmy- 1.5hr – Ordered transducers, contacted suppliers for more information, researched alternatives

Matt- 1.5 hr –Researched frequency analysis required for our setup

Ryan 1.5 hr – Tested last semester's prototype, researched stimulation methods

Jack 2.5 hr – Created and conducted sensitivity tests, researched stimulus necessary for region

Becky 1.5 hr – Research frequency of speech related aspects

Team total hours for this week: 11.5 hrs

Cumulative team hours to date: 81.0 hrs

