Tactile Auditory Sensory Substitution
Progress Report 4
2/17/07 – 2/23/07

**Project Title:** Sensory Substitution Device for Hearing Impairment

**Team Members:**

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**Client:**
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**Problem Statement:**
The goal is to design and develop an auditory substitution device that through the use of 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 in order to prepare the system for laboratory trials.

**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, mid-semester oral presentations
3/10 – 3/16 Write and hand in written report, PDS, and notebooks
3/17 – 3/31 Work on design
4/1 – 4/8  Spring Break and continue to work on design
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. Give final poster presentation

**Last week’s goals**
1. Continue research in the frequencies of speech
2. Continue research in alternative approaches to stimulation
3. Try to set up meeting with Tom Crabb

**Summary of Team Accomplishments:**
1. Alternative transducers were researched
2. Pros and cons of vibro vs. electro transducers were further researched
3. Voice recognition methods were researched
4. Wearable tactile displays were researched
5. Frequency ranges and analysis were researched
6. The research was compiled together and discussed

**Statement of Team Goals for Upcoming Week:**
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-tranducers
4. Make decisions about prototype
5. Prepare for mid-semester presentation

**Team Difficulties:**
1. Getting in contact with Tom Crabb to obtain vibro-transducers

**Activities and Individual Accomplishments:**
Team In-class/lab meeting (1 hour)
Compiling of research (1.5 hours)

Jimmy 1.5 hr  Researched other types of vibro-tactile transducers
Matt  2.0 hr  Researched and analyzed the incorporation of voice recognition systems
Ryan  1.5 hr  Tried contacting Tom Crabb numerous times, researched electro-tactile stimulation
Jack  1.5 hr  Wrote progress report, researched vibro vs electro and wearable tactile displays
Becky  2.0 hr  Researched and analyzed speech frequencies

**Total hours for this week: 21.0 hrs**
**Cumulative hours to date: 69.5 hrs**