

Pulse Oximeter Team

Progress Report #5

2/13/09 – 2/20/09

Team Members

Bogdan Dzyubak – Communicator
Joe Helfenberger—BWIG
Jonathan Meyer—Leader
Matthew Parlato—BSAC

Clients

Amit Nimunkar
Jonathan Baran

Advisor

Dr. John Webster PhD.

Problem Statement

The purpose of this project is to develop a low-cost pulse oximeter for use in developing countries. It will be integrated with an innovative medical technology platform which uses a handheld processing device to record and display patient data. The oximeter must be rugged, durable, inexpensive, and must deliver data to the handheld processing device as an analog signal.

Team Goals

Previous goals for this week

- Finish the PDS.
- Finish brainstorming, explore design alternatives.

Goals for next week

- Finish the PDS.
- Identify appropriate materials for the housing of the oximeter probe.
- Develop ways to minimize oximeter output errors due to variable forces applied to the probe.
- Find specifications for the spacing and angles between the probe's LEDs and photodiode.

This week's accomplishments

- Finalized our decision to develop a forehead reflectance probe.
- Developed ideas for securing the probe on the forehead.
- Jonathan Baran acquired [ISO 9919](#).

Project Schedule

The table below is a Gantt chart of the projected timeline. Dark colors are used for completed stages, and light colors for incomplete stages.

Tasks	January		February				March				April				May	
	23	30	6	13	20	27	6	13	20	27	3	13	17	24	1	8
Project Development																
Research	█	█	█	█												
Brainstorm				█	█											
Design					█	█	█	█								
Prototype									█	█	█	█	█	█	█	
Deliverables																
Progress reports	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Midsemester presentation							█									
Midsemester report								█								
Final presentation															█	
Final report																█
Communication																
Advisor Meetings		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Client Meetings	█	█														
Website		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

Difficulties

Several team members had exams this week.

Activities

Date	Time	Team member(s)	Activities
2.13.09	3 h	Team	Discussed the project with Dr. Webster and Jonathan Baran.
2.18.09	2 h	Bogdan	Identified a variety of articles on reflectance pulse oximetry, read part of <u>Design of Pulse Oximeters</u> , by Dr. Webster.
2.18.09	2 h	Jonathan	Read part of <u>Design of Pulse Oximeters</u>
2.18.09	2 h	Team	Decided to use forehead reflectance, developed three options for securing the probe to the forehead. Identified several potential problems, including scratching of the LED and photodiode cover, and variable forces applied to the probe.
2.19.09	2 h	Matt	Read part of <u>Design of Pulse Oximeters</u>
2.19.09	1 h	Joe	Updated website, and researched

Expenses

We have not yet accrued any expenses.