**Operational Specifications**

A schematic for the laser probe must be created and tested through circuit design software, after which it will be sent out for product development. The probe will contain multiple laser diodes spaced equally apart from each other, which will be purchased separately and soldered onto the circuit. The probe will be powered with direct current and alternating current power in order to allow the laser diodes to transmit light at different wavelengths (780 nanometers and 830 nanometers). An optical detector will be hooked up to a data acquisition device and transmit analog data which will then be converted to digital data for analysis. The analysis will be done using software which will graph the different input frequencies and the amount of diodes emitting those frequencies. This data will later be used for spatially coding and imaging the biological tissue.

**Product Specifications**

**Material Specifications**

- **Software:** G (LabVIEW)
- **User Interfaces:** LabVIEW
- **Hardware Interfaces:** Monitor, 10 cm Laser Diode Probe
- **Communication Protocols:** National Instruments DAQ
- **Communication Card:** NI PXI-514
- **Features:** Graphical laser detection across a medium (Phantom)

**Hardware Specifications**

- **Maximum Input Voltage:** 11 V
- **Minimum Input Voltage:** 9 V
- **Input Current (System):** 800 mA
- **Input Current (Laser):** 75 mA
Laser 1 Power (Input 1): 30 mW
Laser 2 Power (Input 2): 5 mW

**Computer Requirements**

Operating System: Microsoft Windows 7
Processor: 1.5 Ghz Intel Dual-Core Processor
Memory: 4 GB DDR2-SDRAM