Erica Kramer  
Week 10 Report – March 21 through March 28  
Accessible Incontinence Control Device  
Team 8

Work Completed

The wireless was again a focus of our work this past week. The ACODE-300s have been connected to the computer via serial cable and Zack and I have been attempting to configure them and make them communicate using HyperTerminal. Using a manual found online we followed the set up steps to configure the transceivers using the PC. The manual itself was very poorly written and the screen shots and the written steps did not match. We tried following both several times but were unsuccessful. We should have achieved a screen that looked like the one shown below in Figure 1. Instead we both kept getting a message that our ACODE was in slave mode. Since both my chip and Zack’s were both in slave mode neither one could search for the other and attempt to communicate.

![Figure 1](image)

As a group we decided that we could not continue putting so much time into our wireless without getting any positive results. In order to finish our project on time we decided we should order different wireless transceivers that would hopefully function better and have a better manual or source of information to help us troubleshoot. We ordered the eb505-SER from A7 Engineering.

We also did work on our test set-up this week. The latex tubing we ordered was too firm for the artificial sphincter to compress. We looked at other tubing options but no other options seemed any more likely to work than the tubing we had. Zack used the finger of a latex glove and inserted it in place of a section of catheter, as shown below in Figure 2.
Zack and I then tested the new artificial urethra. Water flow through the “urethra” was good, with no leaks around the edges where the latex glove was attached. We connected the artificial sphincter to a micropump and tested to see if water flow could be stopped by inflating the sphincter. This was also successful.

We also tried wrapping the stretch sensor around the artificial bladder to see if the resistance values varied more consistently with volume. This set-up is shown below in Figure 3. This set-up was also unsuccessful.
Future Work

There are two very important tasks left to complete on our project, as well as a number of smaller things. First of all, wireless communication needs to be established. The new wireless transceivers should be here by midweek and we really need to try to establish communication by early next week. Once we know for sure what we are using for wireless we can order a PCB board to mount our circuits on.

In addition, we are waiting for the rest of the sphincter parts to arrive from AMS so that we can build the implant. This should not be very time consuming to build but we need to make sure we have adequate time for troubleshooting.

Project Review

I personally feel like although we have a good portion of our project completed we have not accomplished much in the last week. The wireless has really thrown us behind schedule and we need to work extra hours once the wireless transceivers come in to catch up to where we should be. If we cannot get the wireless working and the implant built quickly enough we will not have time to work on improving our test set-up for presentation purposes.

Hours Worked

I worked 11 hours this past week. I had wanted to come in on the weekend as a group to put in more time, but since we are waiting on parts we really didn’t have anything to work on Saturday.