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Week 6 (10/8/07-10/15/07)  
October 15, 2007

**Expert Anesthesiology Monitoring System**

**Work Completed**

At the beginning of the week, I contacted NI support in two different ways. First I created a forum thread on their discussion forum and secondly I started a running dialog with a Noah from tech support. These efforts didn’t directly give me the answers I wanted; however Noah was extremely helpful with guiding me to where answers could be found. I went through the PDA tutorial which enlightened on the topic of build specifications and benefits of using projects as an organizational tool in LabView. An error I received everytime I deployed the PDA VI was the Device Emulator; Failed to open the VPC Network Driver. This error may provide clues about why the server (the laptop) doesn’t detect the emulated PDA.

![Figure 1: PDA VI.](image)

In addition to working with the PDA target, I investigated concepts that dealt with grouping data using strings, arrays, and clusters. Understanding what each advantage and disadvantage, for each format, will be beneficial when I dive into the program that will work with the data Timothy will retrieve from HH’s medical devices. Regardless of my ability implementing these different modules, more importantly we need to determine the exact format of the data we will be retrieving. The idea I am still trying to better understand is the concept of an array. Through discussion, it has lead me to believe that the concept of an array will be valuable in more than just senior design. An array of data is an organizational tool allowing users to observe correlations between different data sets which eventually allow you to develop in depth conclusions.

The program I mentioned that I am using as a backbone structure for the PDA/Laptop communication, has allowed me to understand how to develop a complex communication between the server and the client. The client can transmit to the server what exactly it wants sent to it. The server will use a case structure to differentiate between commands. This concept will allow the Anesthesiologist select exactly what he or she wants to look at. Additional I can export this concept to allow the Anesthesiologist to select what Machine he or she wants to receive data from. Another concept I looked into is the idea of single and double precision float point. Basically this
is a way to alter the numeric value by shifting the decimal point and adding and subtracting zeros. Floating point versus fixed float is important to understand because these two concepts provides the user different pros and cons and depending on the application one may want to use one over the other. Floating point provides a more accurate reading and allow a wider range of values while fix point allows users to display fractional values in native two’s complement.

**Future Work**

We will travel down to Hartford Hospital early this week to continue testing on the Solar8000i in the Anesthesiology research Lab and start testing on the Bis-Monitor. To optimize our groups productivity we have all agreed that the whole group going down to HH is a waste of time because only one computer can be retrieving data at a time. Therefore, Future trips will be made by one or two members while the remaining members work on other elements of the project. This week I will test the PDA VI’s with all 3 PDAs and then begin on the data manipulation VI for the laptop.

**Project Review**

We have a substantial amount of work before our project is completed. Through our contacts we have gain a better understanding about what we is required of us, however it is apparent to me we should have established all of this information last semester. The errors and unknowns from last semester are carrying over to this semester but with an exponential effect. The knowledge I have now is substantially greater than last semester. Our list of contacts and topics we needed to investigate should have been established last semester. Currently we still need to obtain a data sample and manipulate the sample set. Then using Blackfin we need to develop a PCB to control the LCD screen.

**Hours Worked**

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