Project Progress Report

Accessible Infusion Pump User-Interface
Week 5
February 26, 2007
Kevin Golebieski

Work Completed

During this week we were informed about a major setback to the development of our interface. Michael Phillips an Applications Engineer for National Instruments said that there isn’t currently a way to display a LabVIEW® front panel on an LCD how we envisioned. Through researching the Blackfin options currently on the market from Analog Devices and National Instruments a new development board and an extender kit were found. Both the BF533 EZ-KIT Lite and BF561 EZ-KIT Lite are the basic multimedia starter boards that are shown below.

![BF533 and BF561 EZ-KIT Lite Development Boards](image)

*Figure 1: BF533 and BF561 EZ-KIT Lite Development Boards*

Both of these boards offer captured single frame video to LCD out and JPEG/MJPEG display capabilities. This causes another problem because we wish to have running timers within our VI front panel. The BF561 board does support Video In LCD/Video Out but I suspect that this is only for devices such as DVD players. These options are all relatively viable for the project but further support from NI will be needed before a purchase is made. On a better note the boards do have a SpeexEcho feature that takes a speech like stream that gets encoded and played through speakers. This may solve the problem of our audio output of the words on each tabbed screen.
Another solution that Hassam pointed out is the Touch Panel LCD module that NI offers shown below.

![Figure 2: Touch Panel LCD module for LabVIEW®](image1)

By changing to this method of display we will lose the tactile cues for each of the buttons, along with being limited to what we can display to the monitor because the buttons must also be presented. Another large problem inherent to this product is the price. At almost $900 before shipping, the rest of our budget would be tight pressed if another large setback is found further in the development cycle.

The last option that was found is the Audio/Video EZ Extender board, shown below, that attaches to the BF537 EZ-KITLite Board that we currently possess.

![Figure 3: Audio Video EZ-Extender Board for use with BF537 EZ-KITLite](image2)
This board gives the BF537 EZ-KIT Lite audio and visual options that aren’t normally available on it. Further consult is needed with Analog devices and National Instruments to determine our best option for displaying what we wish.

**Future Work**

Continue to search for the best option for displaying our front panel screens. This may lead us away from the running timer and only allow screenshots to be shown. Find correct video cables so that we can try and use the LCD which we already purchased. Work on getting a 4 axis stepper motor controlled through LabVIEW® so we can directly control the infusion pump stepper motor.

**Project Review**

The major setback that we found this week has forced us to once again look for new options of display. This time it’s a little more difficult to find a solution considering work has already been put in to develop a LabVIEW® program. Not only this but we have already purchased an LCD which we now either have to scrap or find a way to get the correct video input displayed.

**Hours Worked:**

12 hours