



Budget:

Biomedical Embedded Systems Technology (BEST) has spent approximately \$160 to date. These costs include: the Atmel microcontroller board, USB daughter card, ZigBee wireless module, parallel port to USB convertor and ECG circuit parts. These costs have been reimbursed to the members who bought the parts from our initial \$600 funding provided by the Engineering Science Student Endowment Fund (ESSEF).

Human Resources

BEST team members are communicating with each other through email, phone and by holding weekly meetings. We are nearing the 3 month mark from the beginning of the project, and even with all the pressures from the technical difficulties, we are all still friends and the group dynamics are in a healthy condition.

Hardware:

BEST is in the process of implementing the Electrocardiograph (ECG) portion of our system by placing orders for the necessary hardware parts such as the signal amplifier, resistors and capacitors. We already have the required ECG Electrodes and are waiting for the other parts to arrive for completion of the circuit. Once the circuit is fully assembled, we may begin the testing procedures.

Software - GUI:

For the GUI we considered several programming languages and narrowed our options to Java, Visual Basic and C#. After some investigation, we concluded that C# would be the programming language best suited for our project. As a part of the .Net family of programming languages, C# has several visual libraries that we could use. For example we have managed to integrate a graphing library with our GUI to plot and show ECG graphs.

The .Net framework also allows us to easily connect the GUI to a serial/USB port. We have been able to connect to our microcontroller through a USB port and transmit/receive data between the GUI and our microcontroller.



Hardware/Software – Wireless module:

After researching and comparing commercially available wireless systems, BEST has decided to order the XBee-Pro XSC module which is a drop-in wireless solution. The XBee-Pro XSC is engineered to provide reliable delivery of critical data between remote devices. BEST is working on the communication of the wireless system with GUI and microcontroller. The initialization and modem configuration of the wireless system is complete. The next phase of the wireless communication is to program the wireless modules' firmware in order to exchange data between microcontroller and the GUI. The last stage of the wireless communication is to test the system in a variety of distance ranges to verify that it satisfies the desired design specification.