Sentinam Innovations

Progress Report for a Remote Monitored IV for Home Care

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Introduction

This report outlines the progress of Sentinam Innovations' Sentipump, a remote monitored IV intended for home care use. Developments and enhancements made since the Oral Progress Report, planned testing and integration steps, and current state of company finances are explained in this report.

Progress

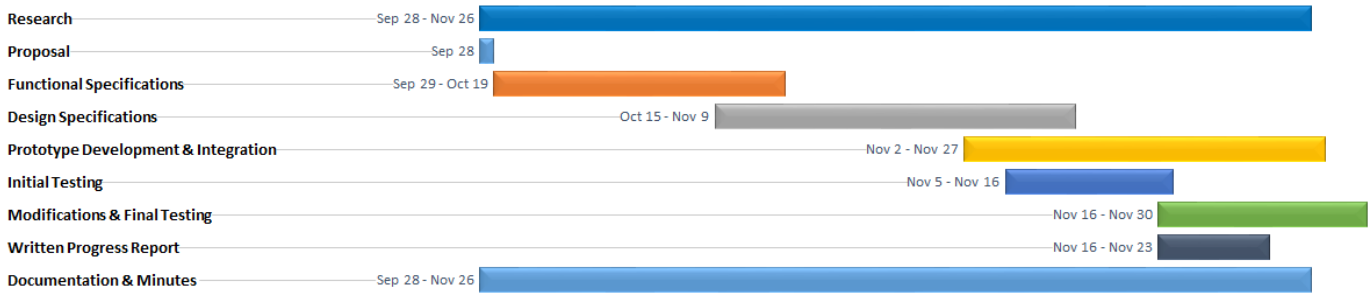

Figure 1: Product development Gantt chart

Figure 2: Key Project milestones.

Schedule

Sentinam Innovations is trying to stay within the projected schedule that was provided in the proposal. According to the proposal, development of the prototype

should be complete by November 30, 2015. Unfortunately, a delay in shipping of parts, and also incompatibility of one of our main sensors with the Arduino microcontroller will likely cause a ten day delay in the completion of the Sentipump prototype.

Improvements and Modifications

Initially, we had planned on using a flowmeter sensor to calculate the rate of flow of IV fluid. Unfortunately, the data on the flowmeter could not be read unless we ordered another component that acted as a bridge between the sensor and the computer. Moving forward with this option would have caused a significant delay due to the limited availability of the product. Furthermore, other flowmeter sensors that were more readily available and did have a PC bridge built-in, were very expensive and would have exceeded the projected budget.

Taking these problems into consideration, the members of Sentinam Innovations chose to build their own drip-counter. The drip counter built by us has the following advantages over the products available in the market:

1. higher accuracy,
2. considerably cheaper price,
3. easy conversion to serial data to be read by microcontroller, without the need for external components.

Budget

Sentinam Innovations is financially sound, and is well within the prototype development costs estimated in the project proposal. We have spent approximately $400 on parts required for developing Sentipump. These costs have been shared equally by the team members of Sentinam Innovations.

Human Resources

Our team shares a healthy group dynamic, and is working well in conjunction to provide the knowledge and skills required to build our product prototype effectively. We tend to meet three times a week, and are constantly updating each other on progress through instant messaging.

Action Items

Casing

Sentinam Innovations is currently working on building a custom casing for the purpose of demonstration. This casing is temporary and will be improved upon for the market version of the product. The current idea for the casing is based upon using transparent plastic or acrylic material in order to show the working of the inner components of Sentipump. The casing for the prototype is expected to be fully developed by the end of the upcoming week.

Testing

Sentipump will be put through a rigorous testing phase, where each component is tested separately, including the peristaltic pump, the Arduino microcontroller, the user interface and the mobile application.Once each component's functioning is tested to be efficient and reliable, the system will be integrated and tested as a whole. Currently, the pump has been tested and approved for integration. The upcoming week will be used for testing the rest of the components and the final prototype will be developed by December 10.

Integration

Integration of all the components will be the final step in the development of the Sentipump prototype. This step will be carried on after each individual component is tested to ensure smooth functioning and reliability. Integration of the components will take two days and will be complete by December 10.

Conclusion

The members of Sentinam Innovations have made a great effort to ensure the completion of the different phases of development of the Sentipump prototype. Due to certain issues with shipping delays, and incompatibility of parts, we are currently slightly behind schedule and are making every effort to make sure that the prototype is fully developed and tested thoroughly by the required date. The team morale is high and everyone is contributing equally and communicating effectively.