

Endeavour InvenTeam Invention

Progress & Plans #7

Current Status:

We are currently working on completing our power supply, enclosure prototype, and pH sensor. Also we are in the process of making all the systems work together simultaneously.

PAST MONTH:

Accomplishments

Since Josh Schuler's (you) last visit we have been working very hard and productively. In this past month we have been focusing more on the subject of communications, enclosure, power supply, the EEPROM, LCD, and the pH sensor. We have been working closely on these subject to further launch us in the right direction.

With the communications, we have been working on further expanding on experimenting with the IR Buddies as well as the M2M cellular phone. With the IR Buddies we have gotten them to communicate with one stamp. However the IR Buddies can't be integrated with every stamp that we have, so we are planning on ordering a transceiver so that it will work better with all the stamps on our test-bed. With the M2M cellular phone however, we have just finished researching on a plan for the phone so that we can get a sim card. In the Meantime we have been using some of our teams own sim cards in our cell phones to test it. Now on our enclosure, we have started on building our first enclosure prototype. Instead of the donut shape we planned on having, we decided that our invention will be anchored down, so a tube-like enclosure will work better. We have built the initial tube and are beginning to test it so we can fix any problems that we may run across. With our power supply we have been running across problems and have to fix them so that it can propely work. Well that eureka moment finally came, our power supply is up and running and can be used to give power to our stamps on our test-bed. Along with that the team has been working on saving data on the EEPROM as well as sending that dat on command between the stamps. Now we are able to delete data on the EEPROM as well as recount it to receive new data and with the LCD, however, we are still currently working on displaying information on it. Then with our pH sensors we have learned everything about it. We learned how to use it via computer with the program already downloaded to the PC, although there is still more testing that needs to be done.

Another big aspect of this month was our donations. Since our Krispy Kreme Fundraiser we have just been focusing on getting local donations from local organizations as well as companies. Zurn Wilkins and two Rotary Clubs in Paso Robles has generously donated money that will contribute to our trip to show-case our invention to everyone at MIT. We have also some future presentations that we will hopefully be making to the school board as well as the AAUW (American Association of University Women) that will be presented on this coming May 22.

Challenges:

We are still having troubles with the LCD, we believe that we should contact one of our resources and ask them for advice on how to get the LCD functional. The enclosure is another challenge for us mainly because with a new design, we have to test and rework everything for the new enclosure. We are also challenged with the problem of integrating all of the programs on one BASIC Stamp so they coincide with each other.

Next Month

Next Steps:

During this next month we have our last and final budget coming up so we are finding all the necessary parts that we will need in order to get all the final supplies for this project. For the power section we are going to integrate solar panels into our power supply and make a switch so that it will recharge the battery and switch over to battery power when there is not enough sunlight. We will also hopefully finish our first enclosure so that we can start putting stuff into it. Another goal is to integrate our sensor with the other components to make it work as a whole.

Team Function:

The team is finally starting to work better as an actual team. The time that we have is really running out so by all of us functioning better together we can get a lot more things done. Like instead of having only one person working on a portion, several people learn and teach each other so that we can have a back up. However, some people have been absent lately which is not a good support to the team.

Needs and Questions:

Our biggest needs and questions as a team are still how our enclosure and how much power needs to be supplied to our invention. Also we aren't sure yet of how we are going to put together the solar panels and the battery, we know what we want to do but it's just how we are going to accomplish it.

Problem Statement:

AWQUARiuS, Autonomous Water Quality Reporting System, will be a system that allows researchers / scientists to set-up personalized, flexible water monitoring studies in freshwater lakes and streams. The sensors will assess acidity, salinity, temperature, flow rate, and conductivity within 1% accuracy. Scientists will be able to monitor and retrieve data from a web interface that updates every hour, with measurements recorded at every minute. The module will weigh 10 pounds, be able to run on battery power for 15 hours with a solar back-up, free-floating or anchored and cost less than \$500.00.