Bi-Weekly Progress Report #2

Project Short Name: Service-Oriented Robotics Software Development_____

Your Name: _____

Number of hours worked (1) in the first week: 6_____ (2) in the second week 5_____

Due date of this report:_____

1. <u>Tasks and Targets set for the report period (of two weeks)</u>

My task for the first week in this reporting period was to come up with a list of control signals for the components I might be using in the robot. This mostly included the various sensors and the motor controller. The components listen to I2C, so I just needed a list of commands they would accept and what each one would do.

In the first week I also installed XP onto the robot and generally connected all the motherboard related hardware (harddrive, monitor, powersupply, etc). During this session I could not get the motherboard to POST, and it failed without error codes. I ended up having to switch the installed Core 2 Duo for the (also provided) Core Duo and switch the bios chips.

In the second week I am tasked with getting the service-oriented development environment ready on the robot. This includes making sure Visual Studios 2008 is installed and running, as well as setting up Remote Desktop so I can RDP into the computer from anywhere on the internet to make changes easier. (I will have a backup policy for any code written using the robot directly.) Before any of that can be done, a network connection from the robot to ASU will be required. I need to either get the onboard Ethernet card working, or get the PCI wireless-N controller from Linksys to work.

I must also work on creating a document describing the architecture and a list of requirements for the design project. This is to be presented in the report in the next period.

2. <u>Adjustment and revisions made against the original tasks and targets (Explain the reasons and if the changes made)</u>

There have been no major modifications to any of the tasks and targets I set out in the last week's plan. I am still early in the development process and the current work is abstract enough and not too interdependent as to cause scheduling headaches.

3. <u>Summary of the accomplishment in the report period</u>

In the first week of this period, I set out to connect all the components for the robots computer brain. This was basically installing a desktop PC using the demonstration server sized motherboard that Intel provided to us. After a lengthy headache where I couldn't get the motherboard to POST, I was able to switch out the two provided processors, a Core 2 Duo for the older but still powerful enough Core Duo. This necessitated the swapping of a BIOS chip on the motherboard, but luckily everything worked when I was done. (I took proper precautions against damaging anything with static electricity.) Once that was done and I had XP running, I

installed the computer components into a plastic enclosure which will be mounted above the hardware on the finished robot I was given from the FIRST robotics competition.

While they were getting the hardware installed in the casing, I collected specifications for the separate components I was going to have to interface with. These would be the sonic range finders, motor controllers, and various other sensor components. I compiled a list of control signals which I could send over I2C to receive information or cause action with the various components.

Most recently I was able to setup and test Remote Desktop connections with the robot from ASU's network. I was able to make the PCI Linksys N wireless card function. Due to a problem where the Linksys software would disable the cards radio (preventing reconnecting to the network automatically upon restart) I uninstalled linksys's connection management software. Unfortunately the software decided to automatically uninstall the actual drivers also, so I will need to obtain those somewhere and get the robot back onto the network before I can see any benefit from what I did. The onboard ethernet card is not working, presumably due to an XP driver problem. I will be going back into the lab during this week with a usb stick to get the network drivers working again.

Also, I confirmed the installation of Visual Studios 2008 and Microsoft IIS, which will allow us to test the operation of the service-oriented drivers once they are written.

4. Conclusion Remarks

I have begun making good progress, but I still need to do more high level planning. I need to understand the roadmap for the semester so that I can budget the time well and deliver the product in time. Things are currently looking good, but I can't make accurate predictions without going through further advanced planning sessions.

The work I have done already is going to set us up for an easier time down the road, but as of yet, the robot doesn't actually do anything, luckily enough for the walls.

5. References used, if any

None, except for previously acquired manuals which are all available after doing a quick google search on the component's name/model.