

D009 – 4

To: Senior Management
From: Senior Design Class
Date: February 18, 2008
Subject: Weekly Status Letter

This week we presented the PDR Report for the project on Monday, February 11th. There were a few action items regarding changes that needed to be made in order for the report to be accepted. The sections that needed to be modified were: the Work Breakdown Structure (WBS), the expandability requirements, the overall system block diagram, the overall risk assessment, the cost analysis and the ethics analysis. We made the necessary changes to the document and presented these additions on Wednesday, February 13th. On Wednesday, we were told of additional changes that needed to be made and those included: more detail to the WBS, more detail to the block diagram and some suggestions about automatic control and naming our subsystems. Over the course of the week we made the necessary changes to the block diagram and WBS as well as took into consideration the suggestions by the management which we will look into later on in the project.

As for the project process, we are continuing to follow our respective goals on the WBS. We created a complete list of parts we will need to purchase and looked through some of the old parts that were used last year to see if we could reuse them for our system. We made sure our system held to the expandability and maintainability requirement by using XML for the maintenance interface. A sample XML file was created to test it and it worked properly. We created a basic API for the system and setup a PC in the lab which will communicate with all of the stations and will also be used for the user interface. The computer was set up with a Java communications package which will communicate to the respective stations over a serial port. The UI group and the networking group worked together to get some PC to PIC communication working as well.

Research was done on different PIC's and after determining the ones we felt would work best for our system, we ordered some for free to start testing and constructing parts of our circuits. The networking group got RS-232 communication to work through HyperTerminal on the computers. They also created basic PWM outputs by using different frequency inputs. The group worked on PIC to PIC communication with error checking and successfully got it working. They also almost have interrupts working; they can create them and the PIC sees them but, they need to work on it further.

There was also work done on the low-level circuits such as the power to the rails and trains and sensor circuits were created and tested. The circuit design for the power to the rails is completed as well as the sensor circuits. Testing was done on the circuits and everything worked as expected. Also, Jeff is almost completely finished with the PCB Board tutorials and has started library creation.

We have many tasks we plan to finish during the next week. We will start writing the sending and receiving logic systems, as well as begin designing the PWM and interrupt sub systems. Testing will be done during this process to catch any early errors in the system. We hope to continue working on the UI prototype to handle different events. We will begin to work on the rules for Automatic control and how that will interface with the packet builder. We hope to finish the work on the packet builder and test that as well. The packet decoder should be finished by next week and tested with the packet builder. We will also finish the train switching familiarity and sensor wiring and complete testing on all of the low level hardware we have created so far. We will begin work on the train power circuit design, the switch control design, the train detection circuit and the overall system power circuit device. Lastly, we will begin testing these various circuit elements in PSpice.

The action items completed this week were from the PDR Presentation as well as the creation of our official website on the Lafayette site. We also had to allot a specific amount of time on the WBS for preparation for the CDR report and presentation which was not considered before. The only open action item for next week is to get our discussion board up and running again because the server is down.

Please see attached for the Labor Hour Report spreadsheet and the meeting minutes from the following week.