

WaitLess Bus Tracking System DK-2 Group status email: Due 2009 January 28

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Current Status

- We are finishing up the proposal, and plan to have a writing consultation next Monday to have it looked over.
- We turned in the form to order almost all the parts on Monday. This includes the LEDs, Solar Panel, Wireless serial Wi-Fi module, and LED Drivers/Controllers.
- While waiting for the parts to arrive, we are planning how the software should work, beginning layout of a custom PCB to be sent off and manufactured, and looking into custom weather-proof cases for the project to be placed in at the end.
- Daniel is also preparing a survey to give to students whose results will be incorporated into the proposal's marketing and cost analysis sections.

Task Status: Actions on last week's Action Items

1. Daniel will try to secure the XML link and procedure from NextBus for obtaining the GPS location of the buses. Will try to narrow down the selection of the less than 25mA RGB LEDs we need.
 - ✓ We now have access to the NextBus XML feed, and it looks as we expected, telling us the GPS location of each bus on a route. He also found the Common Anode RGB LEDs we need on EBAY.
2. Matt will begin initial coding to be able to talk to the LED Driver boards using I2C when they arrive.
 - ✓ The LED Driver boards received were TSSOP-24 packages which are tiny but might still be used on the PCB. Re-ordered some samples that are SOIC-24 so we can use an adapter for the mean time to use on a breadboard. Found that if using the Arduino which has an ATmega168 microprocessor, I2C libraries are available for use.
3. Josh will select the best solar panel to provide a steady 5 volts of power to all our electronics. It should also hopefully interface with the solar controller we already have checked out.
 - ✓ Selected the Silicon Solar, Inc. 5.5 Watt 12 Volt battery maintainer model. It was ordered on Monday.
4. Chris will take care of ordering the Wi-Fly serial module we will use to poll the NextBus XML site.

✓ He ordered the module on Monday.

Planned Tasks: Action Items for the upcoming week

- Daniel is going to work on making the PCB layout so it can be sent out as soon as possible. He also made the survey to be passed out and results to be used in the proposal.
- Matt will find SOIC-24 to DIP-24 adapters to be used during initial development of the I2C Driver code. He will also continue researching what I2C and Serial libraries are available for the Arduino development board. He will also start to use and create the website for the project. Will take the eBox to the 4180 lab and see if the TA can reflash it with Windows CE, so it will boot up.
- Josh will look into weather-proof cases to house the project, and create sketches of what it will look like to be placed in the proposal.
- Chris will look into UART serial communication with the wireless adaptor. He will look into having the WEP Key and commands to connect to GT Wireless when the time comes.
- All of us plan to meet Tuesdays and Thursdays, at 4:30 to work on the project.

Problems

We are still unsure about and trying to figure out how the Wi-Fi internet module will communicate with the Arduino. We are unsure of how to save incoming data from serial to a variable or huge array to be parsed. Daniel has secured a contact at Panasonic who has dealt with saving Serial data from a Wi-Fi module. Because of the initial problems and difficulties using the Cypress, we have transitioned to trying to use the Arduino board for communication to the LED Drivers and also to be connected to the Wi-Fi module.