EENG 3910: Project V – Digital Signal Processing System Design

Final Project

Due 09 May 2016

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UNT – Electrical Engineering

***Proposal***

We plan on doing a geo fence. After discussing different ideas with Nick, we decided to use our tiva board with a GPS and LCD to show our current location coordinates and give a signal when outside a predetermined “box.”

Parts needed:

Tiva Series LaunchPad – TM4C123G

GPS Module – NEO-6M

LCD Module – Parallax Backlit LCD

We plan to combine the three components to allow us to create a geo fence that the components will sense and give us a signal when we cross over the boundary.

The GPS module sends us data of our current location. What we need to do is take that data and convert it to coordinates that we can understand and use. Once we have our location in hours, minutes, etc. then it’s a matter of making an imaginary box in the x-y plane as our geo fence. The coordinates will be displayed on the LCD. When we cross the over that imaginary boundary, the LCD will indicate that we gone outside the fence. Since we have not worked with this LCD before, we’re not completely sure what we’re able to do. So when we say the LCD will indicate that we left the boundary, we’re unsure how, but it will show us some sort of signal so we know we left.

As far as dividing up the work load: Chris will deal with the GPS: receiving data and converting it to usable information to output and make a fence. Nathan will deal with the LCD: outputting the coordinates as well as the signal that we went outside the geo fence. Ian will deal with the integration of it all by putting the code together from the GPS and LCD and troubleshooting any problems.