

ENSC 440 – Written Progress Report

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Team 1: Century Solutions

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Introduction

Over the past month, Century Solutions has completed the design stage and is now entering the implementation stage. The following progress report describes the progress that has been made for each subsystem and the next steps that will be taken to complete our proof-of-concept model.

Subsystems

Microcontroller Board – We have chosen the NXP LPC2148 Multimedia Board because it has a 3-axis accelerometer (ADXL 345) attached to it to use for our microprocessor. So far we have been working on understanding the example code for the accelerometer and have been able to read in the data from the accelerometer.

Battery – We also ordered a 2x AAA Battery Adapter to power the microcontroller board wirelessly. We have been able to fully hook up this battery adapter board to the microcontroller board and have been able to power the board by battery.

Wi-Fi Chip – We have decided to use the EasyWiFi Board to access a wi-fi connection. Currently, we are waiting for this component to be shipped and it is expected to arrive within the next week.

SMS Application – We have researched how to send an SMS message to a cell phone over the internet using an email. Also, we have created a web application that is able to send an SMS message via email and we have installed it onto a website.

Budget

Currently, we are still within our projected budget of \$700; however, we are within the last \$100. By the completion of our model, our project may go over budget if there are unforeseen costs, such as replacing broken components, etc.

Human Resources

Our group still gets along well and, so far, there have not been any big disagreements. Our plan is to meet 2-3 times a week, in groups of 2 or 3, to complete the proof-of-concept model by the deadline in April. Furthermore, we all meet once a week to update everyone on what progress has been made and to decide on our next steps for the coming week.

Next Steps

Microcontroller Board – Our next step with the microcontroller board is to create code that will separate a fall from other everyday movements. We will do this by programming the accelerometer to trigger a response once an acceleration of 6g is observed. Then, we will then thoroughly test this acceleration boundary against everyday movements to ensure that no false positives occur. Next, this trigger will be used to send an SMS message over the wi-fi connection.

Wi-Fi Chip – Once we receive this component, we will start to figure out how to attach it to a wi-fi network. Then we will write code to access a website using this connection.

SMS – Once we are able to gain internet access, we will write code to use the connection and our web application to send an SMS message.

Once we have completed all these individual steps, we will then begin to bridge the parts together into a whole to create the working proof-of-concept model for *Fall Assist*.