

## Vision Statement: Novacoast Project

**Project Title:** ResQ Sensor

**Team Name:** J VÁNT

**Team Members:**

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**Team Lead:**

Vivian Escalante

### **Project Description**

#### **Our Vision**

Our goal is to develop an app, ResQ Sensor, using the FLIR Lepton, a thermal imager, that will keep your home, your business, and your family safe and secure without your constant supervision.

#### **What problem is the project solving?**

The ResQ Sensor will have the ability to lower/increase the temperature of the object being detected when the temperature increases above or decreases below the ideal temperature. Occasions when the ResQ Sensor will be useful is:

- detects motion - overheating of a vehicle when a child or animal is inside
- home security/night vision - will send an alert when there are intrusions
- putting out a small fire within a home

#### **Why the problem is important?**

The ResQ Sensor can warn business owners and homeowners of unexpected fires. Not only can businesses benefit from this to detect fires, but also for other minor events, such as when the temperature of an ice-cream machine lowers or rises. The owner or employee is notified and the problem can be fixed ahead of time and product would not be wasted. Also, other disasters that can be prevented is, such as water pipe breakage due to the drop of temperature.

#### **How the problem is solved today?**

Today, when fires occur, there is a smoke detector that detects the smoke and then turns on the sprinklers. This therefore turns off the fire but also damages everything that was around the room and even possible the entire place. Our project will be a motion and heat

sensor that will detect heat and will follow it around. When the detected heat increases to a temperature not desired, it will turn on a sprinkler that will only be directed to the heat it is following and spray only the detected heat. This is the base of our project, but it can be used for many other situations. Due to the fact that our product is based on motion detection using thermal heat, this product can be used in factory industries, toy industries and even as a weapon for the military.

### **Desired Outcome of Project**

We wish to have a working system that provides the client with a smooth experience with ResQ Sensor. They will be able to change the ideal temperature according to their needs and will quickly notify the customer if something out of the ordinary is spotted at their designated surveillance place. Basically, it will seek to prevent malfunction when necessary.

### **Project Initial Milestones**

Our tentative milestones consist of:

- Learn more about how Raspberry Pi and the FLIR Lepton work with each other
- Assign each group member assignments
- Make initial stories
- Construct product backlog
- Settle on which sensors, hardware, and program language will be used/provided
- Find solution to differentiate between a normal stove top and an actual fire - possible solution is to send an image with the notification to ask what you want to do about the situation. If you notice it is coming from the stove then obviously you discard it as it will probably just be due to the flame not an actual emergency.

### **Implementation platform and technologies:**

We will be using the FLIR Lepton, a longwave infrared imager (LWIR) along with the Raspberry Pi that will be used to control the Lepton. Once connected a web application or a mobile application, the ResQ Sensor, will open up for the user/customer to manage its settings and other features.

### **Process Model to achieve milestones**

We plan to use the agile/scrum framework in order to ourselves on track by having a consistent pace. This will consist of daily scrums and weekly meetings with our company mentors Renato and David. Our daily scrums might have to be via Google Hangout or if possible in person. We will begin by having a product backlog before we begin our sprint planning to know of what tasks must be done within our two week sprints. Throughout the process we will prioritize tasks from the product backlog and move the most important tasks to the sprint backlog. The sprint goal is to finish in absolute with all the tasks assigned during that sprint in the allocated time, but if needed we will most likely have to adjust our schedule and update the design. After each sprint completed we will plan the next sprint meeting and the important tasks needed to be completed as well. All of our updates and notes will be annotated on the Google Doc.