# FAMU/FSU College of Engineering

# **Department of Electrical and Computer Engineering**

## **Customer Needs**

Team 301 – FPL Pole Health Detection Names: Corie Cates

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#### **Customer Statements**

In the initial meeting with the customer, the team asked questions to identify the main goals of the project. These questions included pole identification and what tasks the robot should perform. The customers specified that the pole would be made of southern pine and provided the team with a general 18 step process performed by linemen to access the health of a pole. One of the steps included a process called sounding in which the inspector uses a hammer and raps around the pole to detect any voids caused by rotting. Furthermore, this process is performed in the area from ground level to 6 feet above ground level.

In a follow up meeting, the team asked the customer about the specific performance of each task. The customer expressed that the most important actions of the robot are for the robot to be able to climb to the height of the telecommunications line and for the robot to be able to detect internal voids in the pole. Additionally, the robot should be simple enough to be used by a single lineman.

### **Meeting Transcript**

The following questions were asked and responses were given during our initial and follow up meetings with the customer.

- What type of utility pole will the robot be operating on?
  - Southern Pine
  - The team will be provided with a sample pole for testing purposes.
- What is the average diameter of the pole?
  - Focus on the Class II (8.6in) and Class III (7.3in) poles.
- What defines pole health?
  - The amount of internal decay within the pole. The customer provided specification sheets with this information for each type of pole.
- What type of inspection will the robot be performing?
  - Customers provided the team with an 18 step process video demonstrating how the utility poles are checked currently. This robot should provide a simple way for linemen to check poles before operating on them.
- What are the preferred automated steps?
  - The robot should be able to climb the pole and automate the sounding process. It should test the structural integrity of the pole in some way and alert the user of voids in the wood.
- How far does the robot have to climb?
  - The robot should be able to reach the height of the telecommunications lines. Pole heights range from 30ft to 40ft.
- Are there any dimensional restrictions?
  - It must be compact enough to store on the linemans work truck. Additionally, a single person should be able to carry it so it should be around 20-30 pounds.

### Needs

No.	Need Source	
1	Automate sounding process (Hammer Customer Test)	
2	Travel up and down pole and rotate Customer	
3	Portable Customer	
4	Easy to Use	Customer

# Requirements

No.	Need	Requirement
1	1	Able to detect voids in southern pine wood
2	2	Able to climb to height of telecommunications line
3	3	Will weight less than 30 pounds
4	4	Will notify user of voids
5	4	Wireless
6	4	Can be operated by a single person