



ACOUTIS

A MODERN PROBLEM REQUIRES A MODERN SOLUTION

Showcase
Presentation

Problem Significance

Energy consumers around the world are faced with steadily increasing service outages due to outdated and inefficient inspection methods. The world is ready for a new technology engaged in the 21st century.



A Global Reach

Wooden utility poles are utilized across the globe as the main distribution foundation for energy transmission.

The Hammer Test

Inspectors use a testing method known as the “Hammer Test”. Unreliable and outdated, the Hammer Test is susceptible to human error.





Solution

The ACUTIS Project

Air-Coupled Ultrasonic Transduction Inspection System

A modern and revolutionary innovation that utilizes non-destructive testing to identify defects in wooden utility poles. Its primary purpose is to provide an accurate, modern, and cost-effective solution for energy inspection companies.

Redefining Inspections



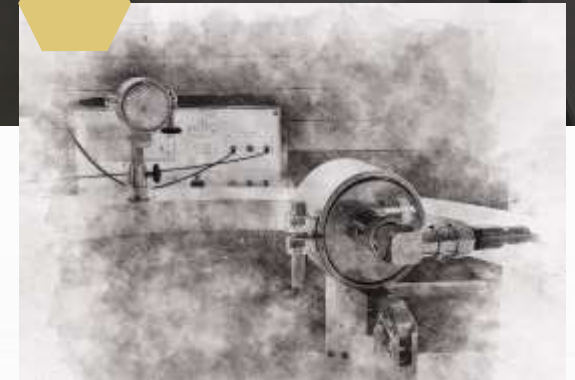
Revolutionary Technology

Engineers work to solve problems, and ACUTIS provides solutions. The most utilized method for wooden pole inspection is what's known as the "Hammer Test". I want to deviate from this traditional method and change the way energy inspections are done.



Non-Contact & Non-Invasive

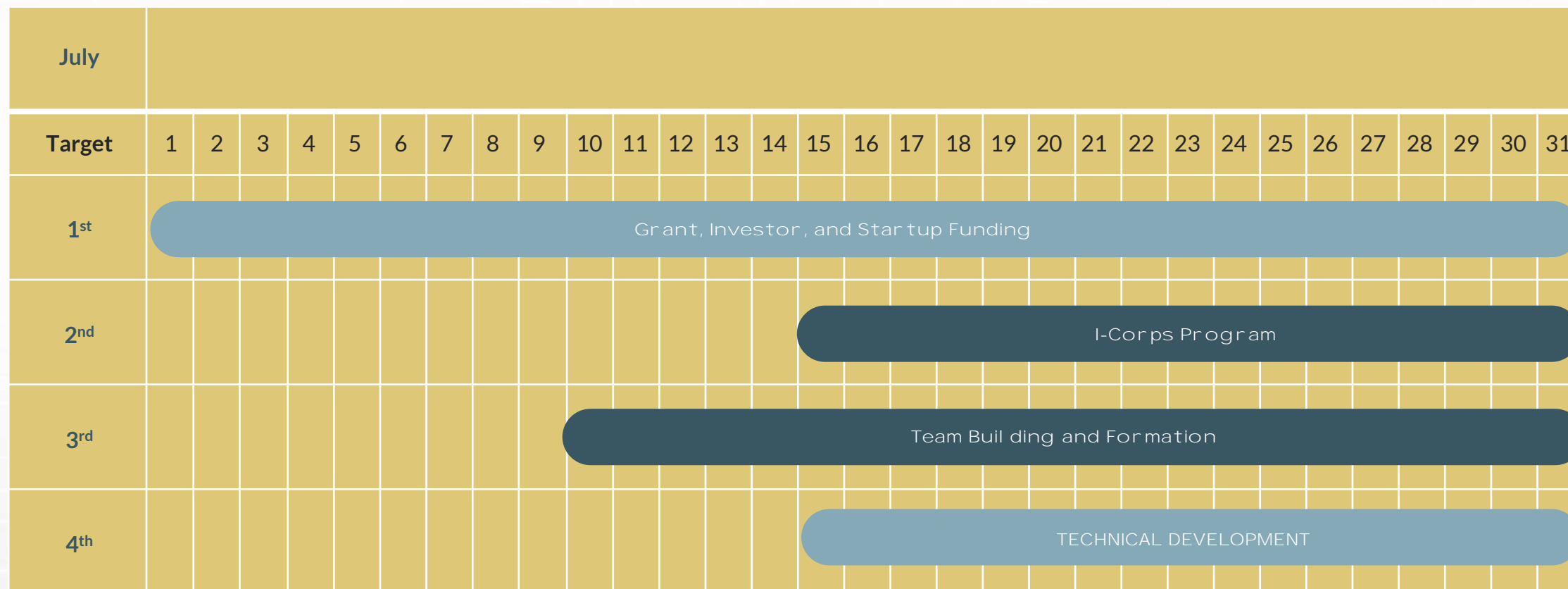
AC in the acronym ACUTIS stands for air-coupled. I utilize air-coupled ultrasonic transducers to eliminate contact with the utility pole. This enables the transducers to send and receive wave signals and diagnostics from multiple vertical locations throughout the pole.



Accurate Defect Detection

The ultrasonic waves can fully penetrate the diameter of the pole and detect defects such as rot, holes, and other anomalies as small as 4mm. This gives the inspector quantifiable and accurate results that they may miss through other methods.

Timeline & Milestones



Funding

- Hultz Prize
- Create the Future Competition
- Collegiate Inventors Competition
- Shell Game Changer
- Global Entrepreneurship Week
- DormRoomFund
- NSF I-Corps Grant
- Global Startup Competition
- Angel Investors

Funding Needed (MVP & Prototyping)

\$80,000 - \$200,000

I-Corps

5-week program to for teams of two to four persons interested in commercializing their research.

Designed to gain customer insight and sentiment.

Travel disbursement of \$2,000 if in-person meeting is requested by the potential customer.

Eligible Grant (After successful completion)

\$50,000

Team Formation

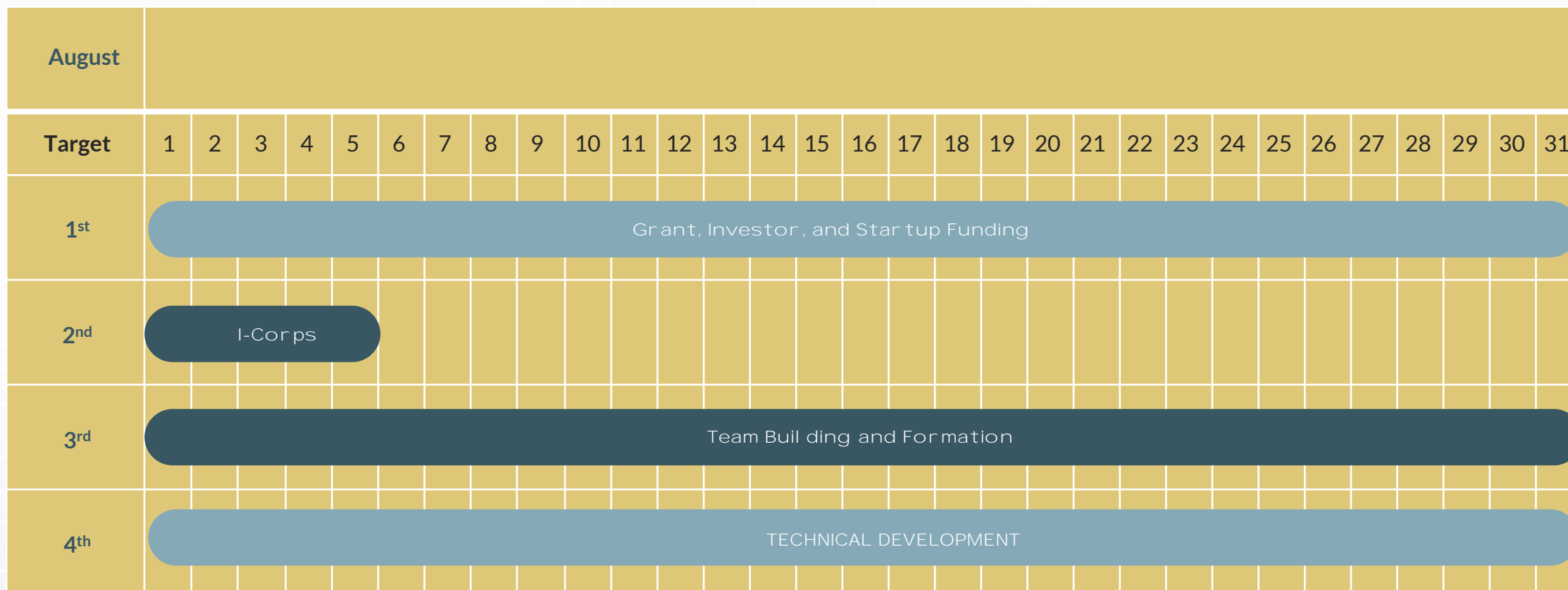
- » Electrical System Setup & Operations
- » Acoustic Wave Signal Analysis
- » Wireless Data Communications
- » AI Development/Programming
- » Drone Development
- » Mechanical Engineering
- » Computer Programming
- » Marketing, Advertising, and Networking

Employee target

7



Timeline & Milestones



Technical Development

1 st Target	2 nd Target	3 rd Target	4 th Target
Pulser Specifics Proposed Pulser/Receiver: RPR-4000 Optimal Pulser/Receiver: UT8000 Find out technical details of the UT8000 and find out if we can implement it into our system.	Pulser Specifics Once an optimal pulser/receiver is identified, further consideration and development is needed to integrate the system efficiently. Operation voltage, toneburst frequency, etc.	Pulser Specifics Material Target: Battery Identification of a battery capable of supporting the pulser/receiver operation (50 Amps). This is the first objective into converting to wireless capabilities	Pulser Specifics Material Target: Pure Sine-wave Inverter Identification of a pure sine-wave inverter to convert the DC power supplied by the battery to AC for the pulser/receiver.
Oscilloscope Specifics Proposed Pulser/Receiver: TPS2000B Optimal Oscilloscope: ? Find out technical details of the UT8000 and find out if we can implement it into our system.	Oscilloscope Specifics Once an optimal oscilloscope is identified, technical details on the system operation will be sorted out and proposed.	Oscilloscope Specifics Configuration of the RS-232 interface and identification of a RS-232 wireless converter.	Oscilloscope Specifics Specific Development: Signal Processing Algorithm A signal processing algorithm will need to be developed to analyze the data from the oscilloscope and provide a determination of serviceability using statistical analysis.

Our Business Model

The ACUTIS system would primarily support technological progress in the energy sector, specifically with wooden utility pole inspections. Our overall marketing approach will be directed towards specific industry leading inspection companies.

Contracted Companies

There are a handful of large companies that receive contracts from energy providers to do their inspections. These companies will be our primary target customers.

Individual Companies

With the development of the ACUTIS, individual energy providers can potentially save millions of dollars in contracts by doing part of the inspections themselves.



Alternative Methods

Alternative testing methods include the hammer test, electrical resistance, x-ray scan, impulse radar, and sonic waves.

Competitive Advantage

All the current methods and technologies used for pole testing have matching inventions on the market. There is no system (patented) that uses air-coupled ultrasonics.

Unique Niche

The ACUTIS has an advantage over all the current technologies and methods used for pole testing.

Complete Solution

Ultrasonic transmission fills every fault or flaw that these competing technologies have, and replaces them with clear, concise, and easy to assess solutions.



Market Strategy

Digital

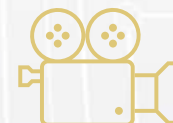
presence



www.theacutisproject.com



www.facebook.com/ACUTISInitiative



Promotional Video (next slide)





ACUTI

SHOWCASE



My Message

*"Try not to become a man of **success**, but rather try to become a man of **value**"*

– Albert Einstein

By revolutionizing the way utility poles are inspected, I can only hope that I can make even the smallest difference for people who are in need. My innovation and the eventual creation of a company will follow the same path of values that I live by. The ultimate success not being reached until I change the face of every wooden pole inspection in the world.

Matthew Maggio
Inventor and Founder

