FENCORA PROJECT

Reimagining the Future, One Idea at a Time

https://hyprpranav.github.io/fenceora

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01

A PROBLEM WORTH SOLVING

PROBLEM

A hardware that can detect and prevent unauthorized use of electric fences

04 NOV 2025

MARKET POTENTIAL

High demand for smart fence monitoring in farms, borders, and private security sectors.

OUR OVER VIEW

Fence Monitoring Features

Real-time monitoring

Monitors fence voltage, continuity, and tamper events in real-time.

Accurately logs ON/OFF history and high-voltage abnormalities.

Accurate logging

Immediate alerts

Sends immediate alerts to forest owners or security personnel.

Reduces manpower costs through drone-assisted deployment.

Reduced costs

Enhanced protection

Enhances protection for forests, farms, and restricted zones.

Provides a cost-effective, durable, and scalable solution.

Cost-effective solution

OBJECTIVE AND GOALS

To design and develop a compact, smart, and tamper-resistant monitoring device that can be discreetly installed on high-voltage or unauthorized fences, capable of:

Monitoring voltage presence, power loss, and abnormal activity like Detecting tampering, cutting, or unauthorized removal
The goal is to create a cost-effective, scalable, and maintenance-free security solution for protecting forest borders, restricted zones, and private properties

03

MARKET OPPORTUNITY

SMART SECURITY IS IN DEMAND-NOW IS THE RIGHT TIME.

SECURITY MARKET IS GROWING FAST.

Smart detection systems are becoming essential for safer and more secure environments.

04

PRODUCT IN ACTION

TECHNOLOGY THAT GUARDS ANIMALS FROM DEADLY FENCES.

Our system keeps watching the fence using sensors.
If it finds high voltage or illegal current, it gives an alert.
The alert is sent to the forest officials quickly.
This helps stop animal deaths near electric fences.
It is easy to use and install anywhere.
The system works automatically and keeps wildlife safe.

COMPONENTS USED

ESP 32 (MICRO CONTROLLER)

LORA MODULE

LITHIUM ION CELL

CURRENT SENSOR
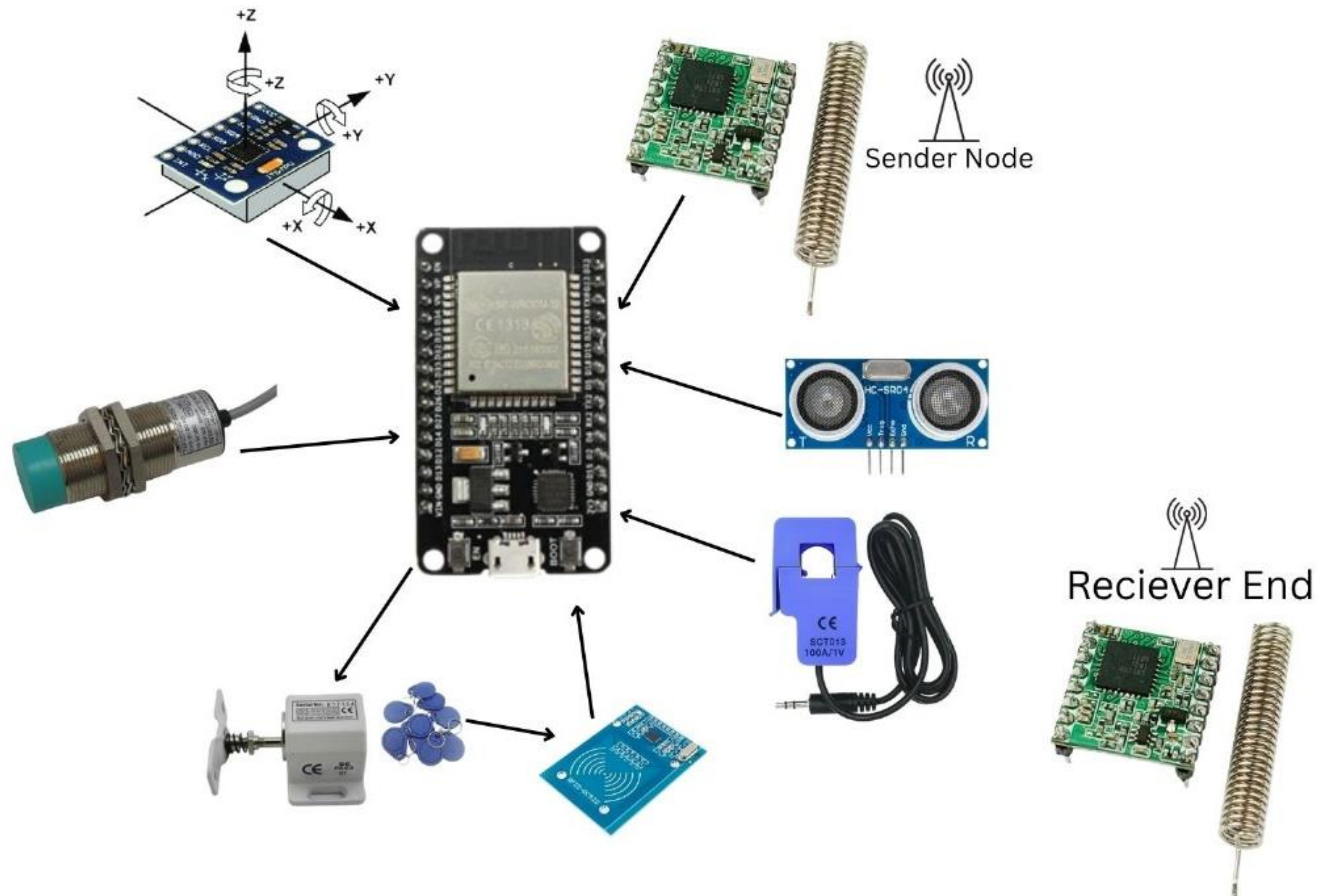
CHARGING MODULE

SERVO MOTOR

ACCELEROMETER

SOLAR PANEL

IR SENSOR

VOLTAGE DIVIDER

RTC MODULE

CAPACITIVE PROXIMITIVE SENSOR

BLOCK DIAGRAM

04

Key components & their roals:

Project Goal
To develop a **portable, drone-deployable sensor unit** that detects **unauthorized electric fence currents** and **tampering attempts**, reporting real-time data to forest officers.

Core Components
- **ESP32:** Controls sensors & sends/receives LoRa data.
- **Capacitive Sensor:** Detects live fence current.
- **MPU-6050 & IR Sensor:** Detect motion/touch tampering.
- **Ultrasonic Sensor:** Detects nearby animals (avoids false alarms).
- **RFID & Servo:** Automate drone deployment and retrieval.

Workflow
Drone places sensor → detects current/tamper → sends LoRa alert → base logs & notifies officer → drone retrieves unit via RFID verification.

Existing system vs proposed system

EXISTING SYSTEM

Voltage Monitoring Circuits: Detects voltage drop or break in fence lines but cannot identify exact fault location or tampering.IoT-Based Monitoring: Sends alerts through GSM/Wi-Fi, but depends on continuous internet and power supply. CCTV & Motion Sensors: Used for intrusion detection; however, they are costly and weather-sensitive.Drone-Based Visual Inspection: Helps in monitoring large areas but requires skilled operators and frequent maintenance.

PROPOSED SYSTEM

Smart Lock-Type Monitoring Device: Compact device attached to the fence to monitor voltage history, spikes, and cuts in real time.Voltage & Current Sensing Circuits: Continuously track electrical parameters to detect anomalies and fence breaks.GSM/LoRa Communication Modules: Provide real-time alerts even in low-connectivity regions.Solar-Powered and Drone-Deployable Design: Ensures continuous operation and quick installation in remote terrains.Centralized Dashboard Integration: Displays live fence status, alerts, and maintenance data for efficient management.

# OUR GO-TO-MARKET STRATEGY

01 STRATEGY ONE

Collaborate with government agencies, forest departments and agricultural boards to deploy pilot versions of the device in real environments.
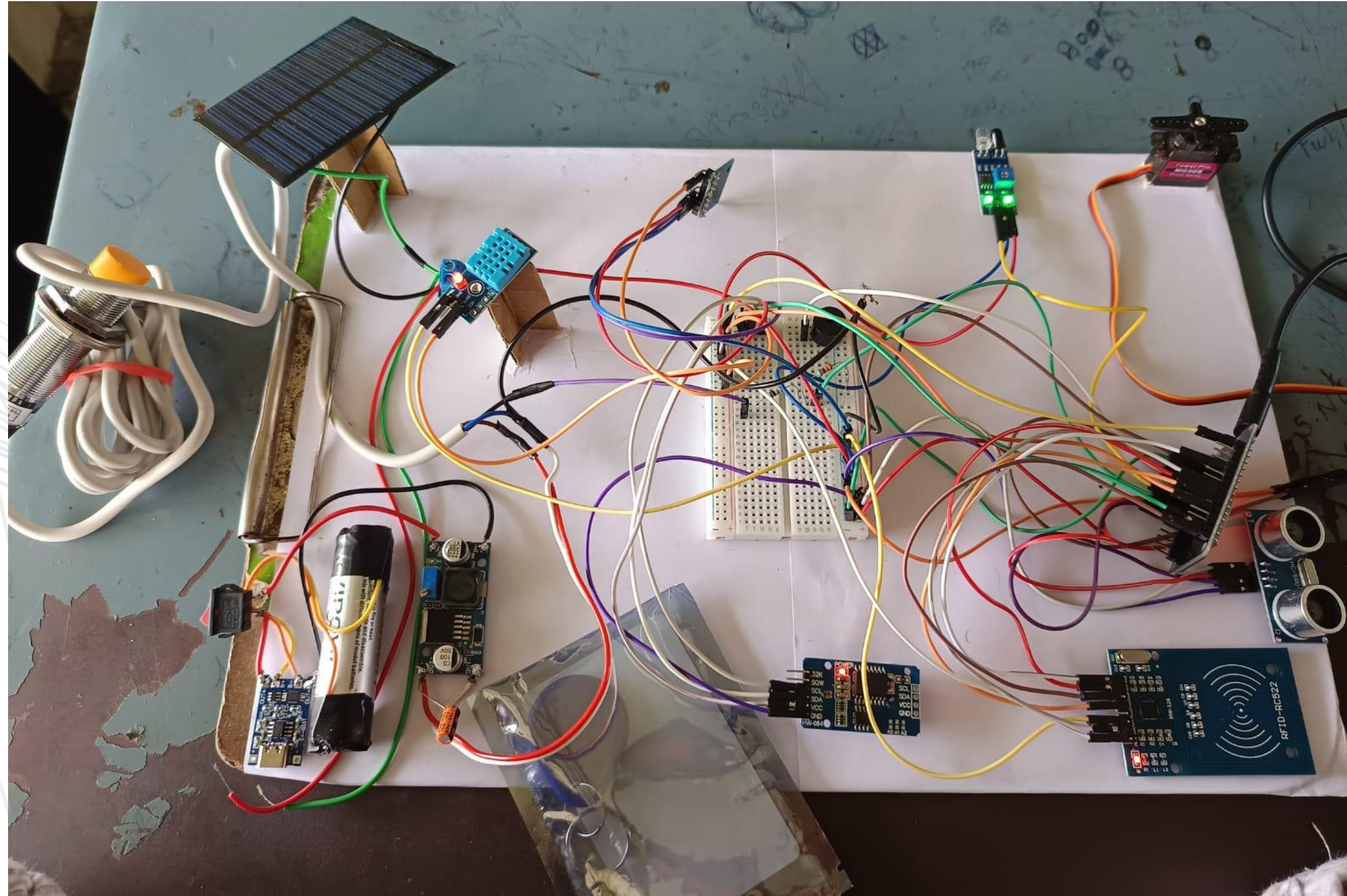
02 STRATEGY TWO

Work with agricultural equipment companies drone service providers and security solution firms to distribute and promote the product.

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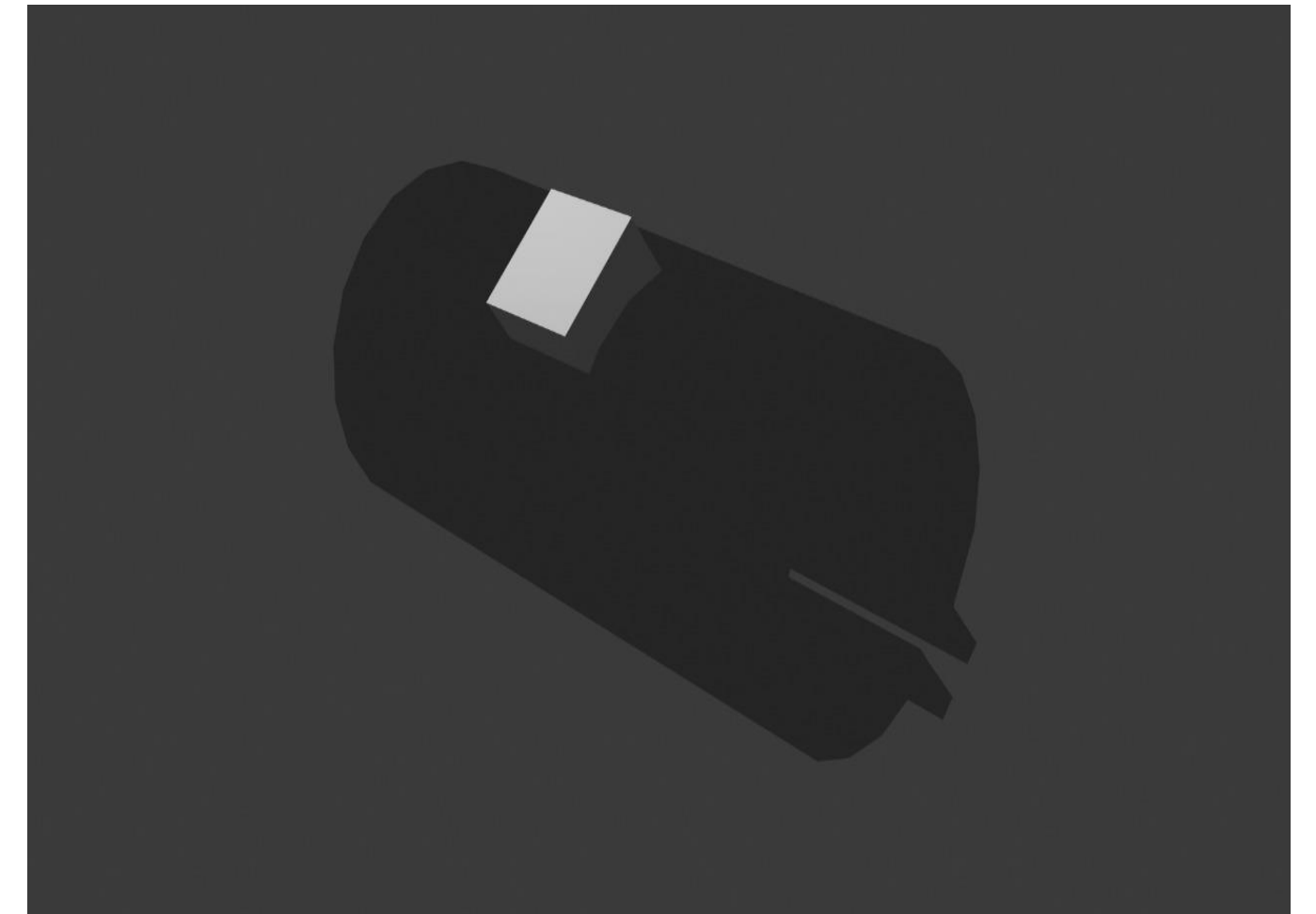
PROTOTYPE

FENCORA COMPANY

THANK
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