



# The Kisan Quest

AI FARM GUARD

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# Design Brief

**Goal:** Develop a cost-effective device to protect crops from birds & wild animals.

## Key Requirements



```
graph LR; KR((Key Requirements)) -.-> R1(Real-time detection & classification  
(Birds, Animals, Humans)); KR -.-> R2(Rugged, outdoor-ready  
(day/night, weather, dust)); KR -.-> R3(Solar-powered + battery backup); KR -.-> R4(Easy to install (plug & play),  
multilingual support); KR -.-> R5(Non-lethal deterrence (sound,  
light, motion)); KR -.-> R6(Optional connectivity (SMS/App  
alerts)); KR -.-> R7(Cost target: under ₹25,000);
```

**Real-time** detection & classification  
(Birds, Animals, Humans)

Rugged, **outdoor-ready**  
(day/night, weather, dust)

**Solar-powered** + battery backup

Easy to install (**plug & play**),  
multilingual support

**Non-lethal deterrence** (sound,  
light, motion)

Optional connectivity (**SMS/App**  
**alerts**)

Cost target: under **₹25,000**



# The Problem Statement



Farms face **heavy losses** due to:

- Cows, goats, sheep grazing
- Wildboars, bears damaging crops
- Birds destroying seeds & fruits
- Traditional scarecrows & fencing are ineffective or expensive

## Current Challenges

- Physical fences → **costly, require** maintenance
- Poison/Traps → **harmful, unethical**
- Scarecrows → animals **adapt over time**
- Human guards → not feasible 24/7

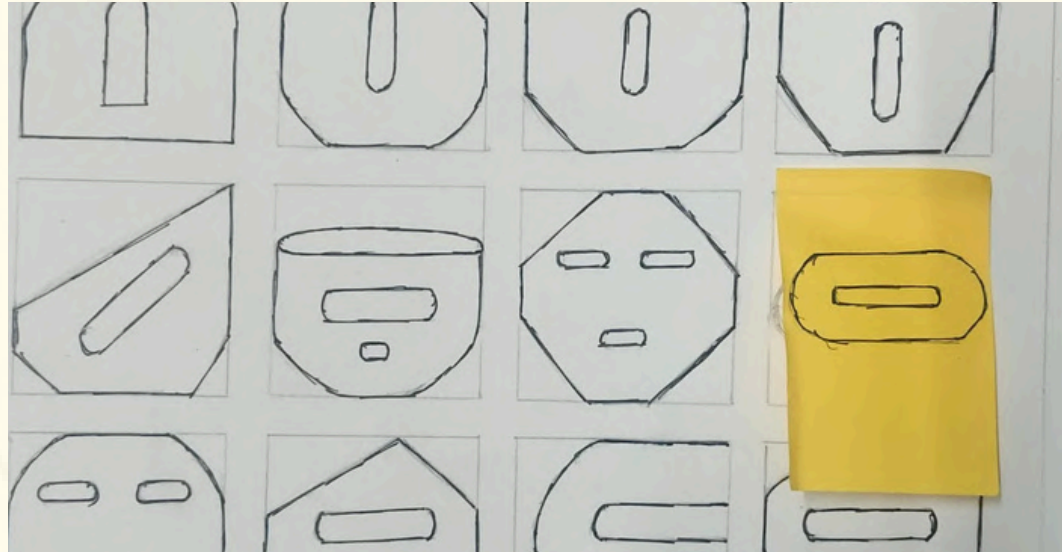


INTRODUCING

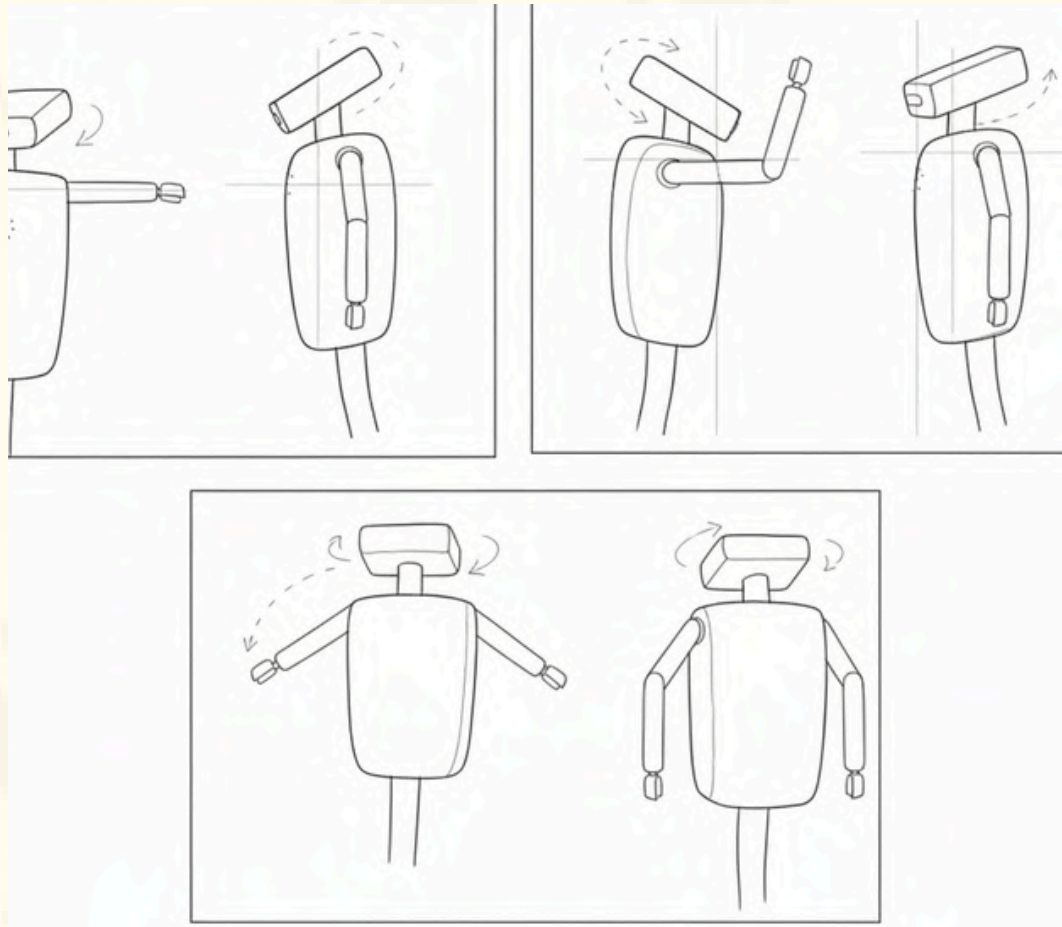
# FarmEye





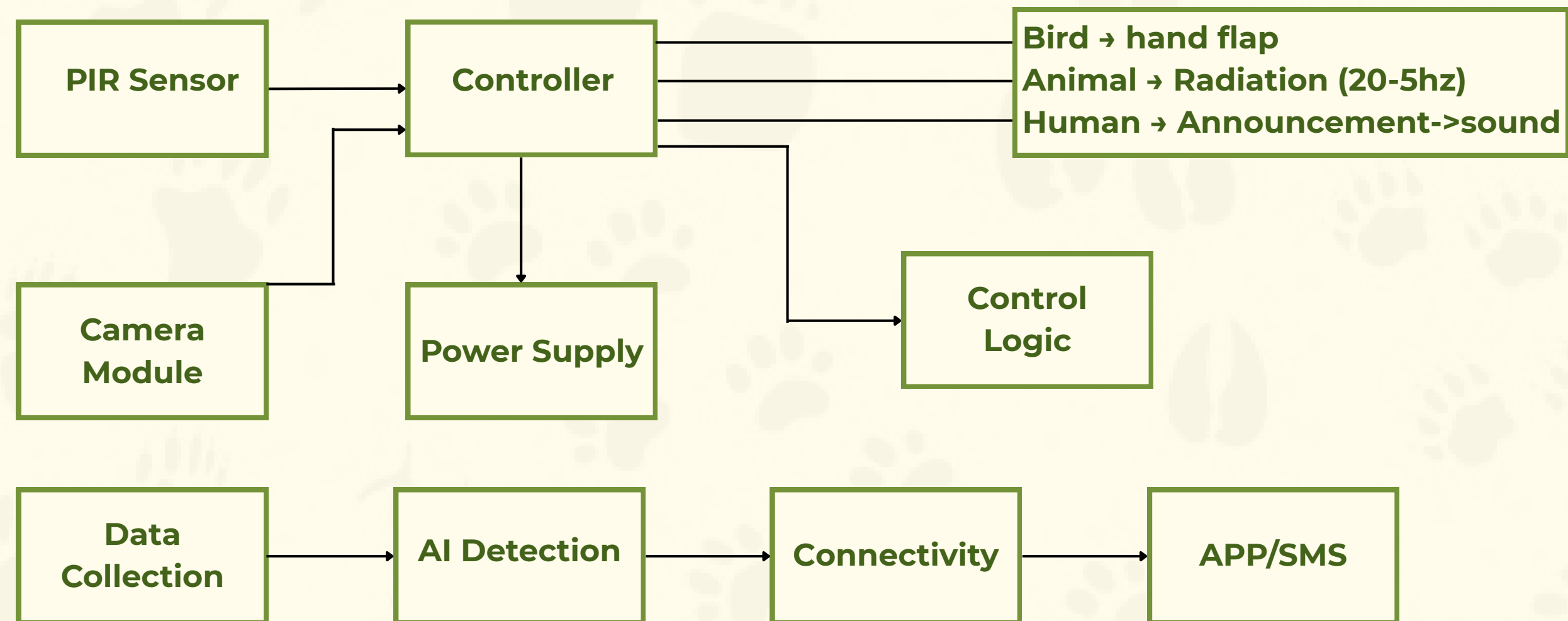


**Form Exploration**



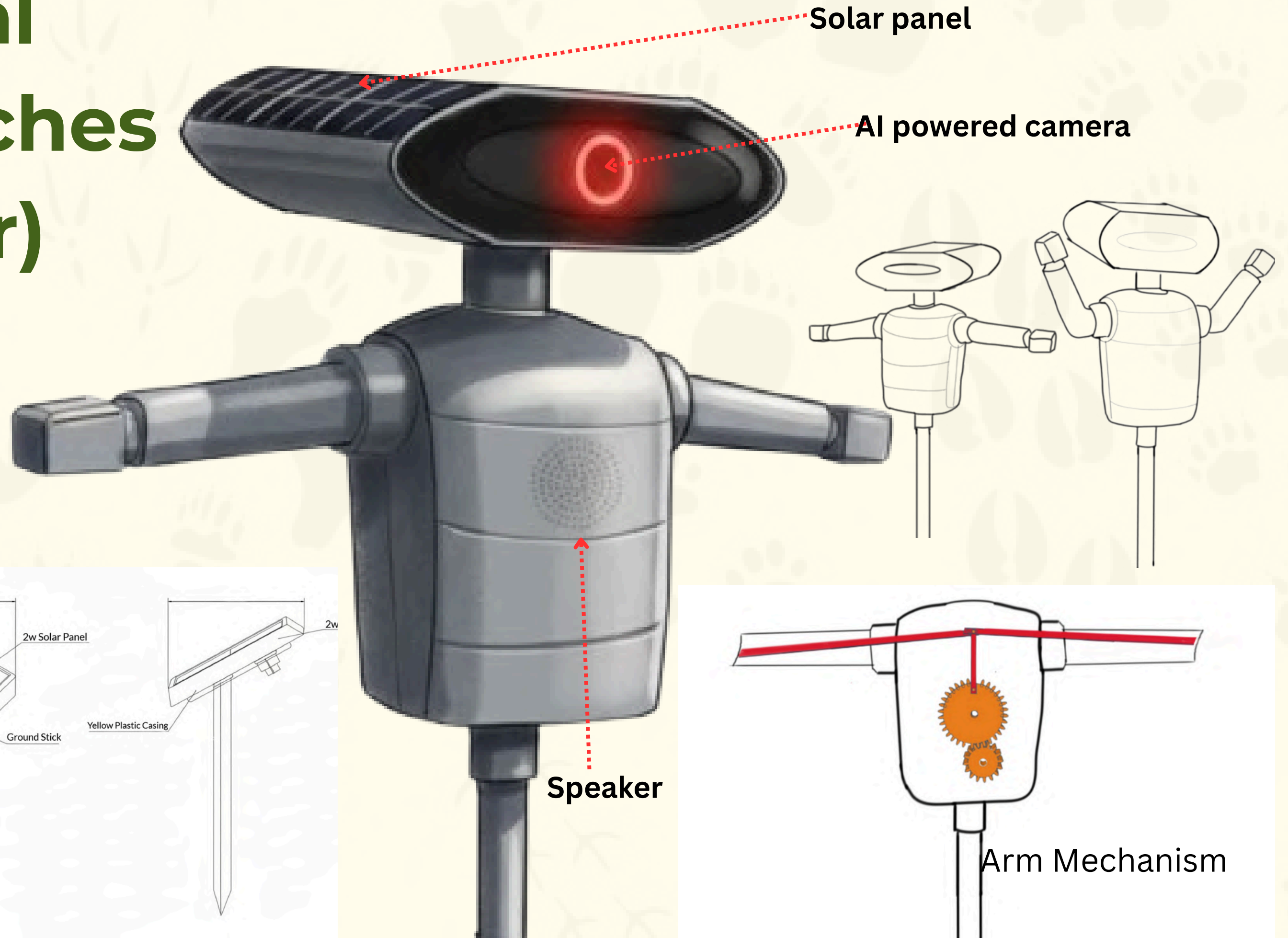
**Early concept sketches**

# Design process and Technical process



**Block Diagram**

# Conceptual Idea( sketches and render)

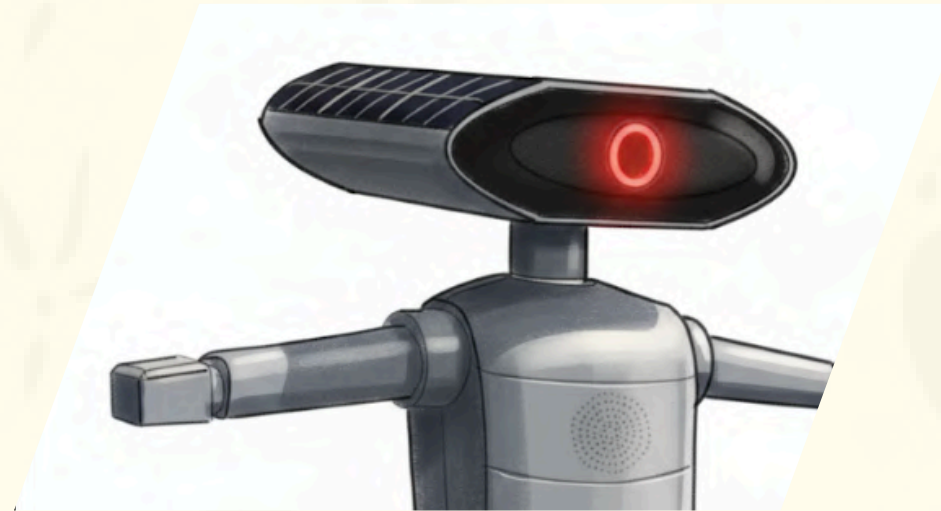




# The Solution: AI Farm Guard



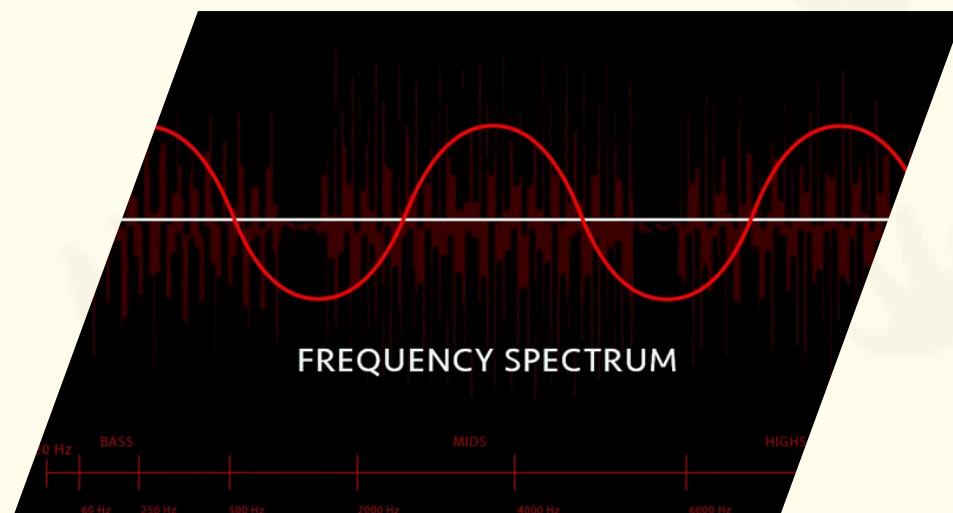
**Virtual Boundary Creation** using corner sensors



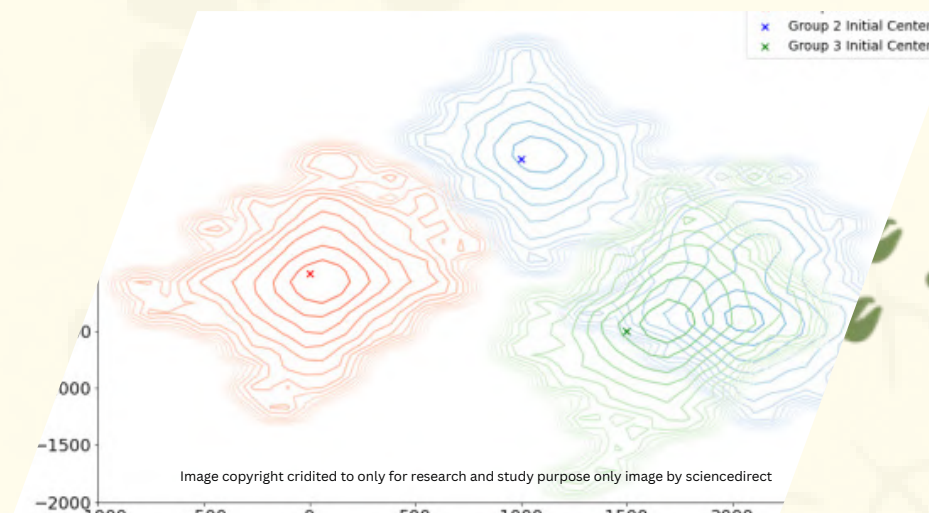
Central **AI Farm Guard Unit** monitors signals



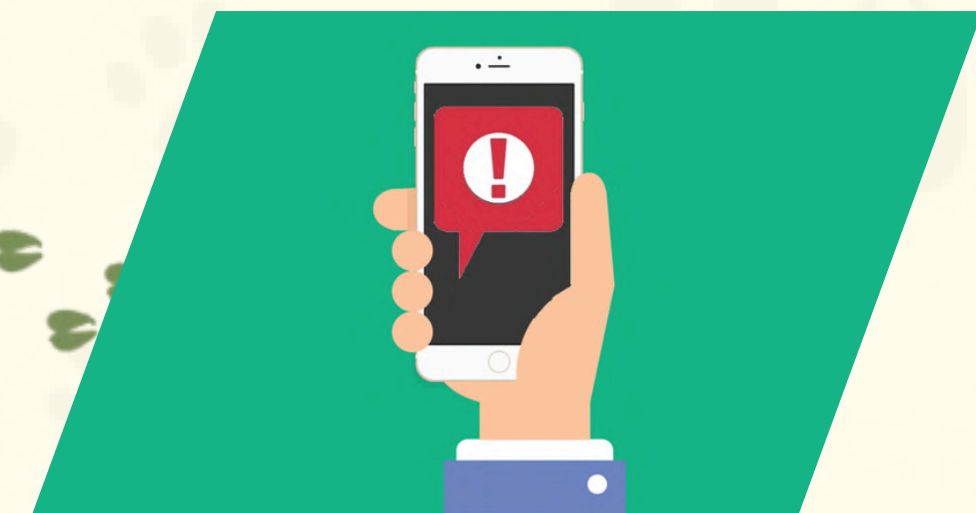
**Camera-based AI** recognition (detect animal type & response)



Emits **20–75 Hz frequency** sound

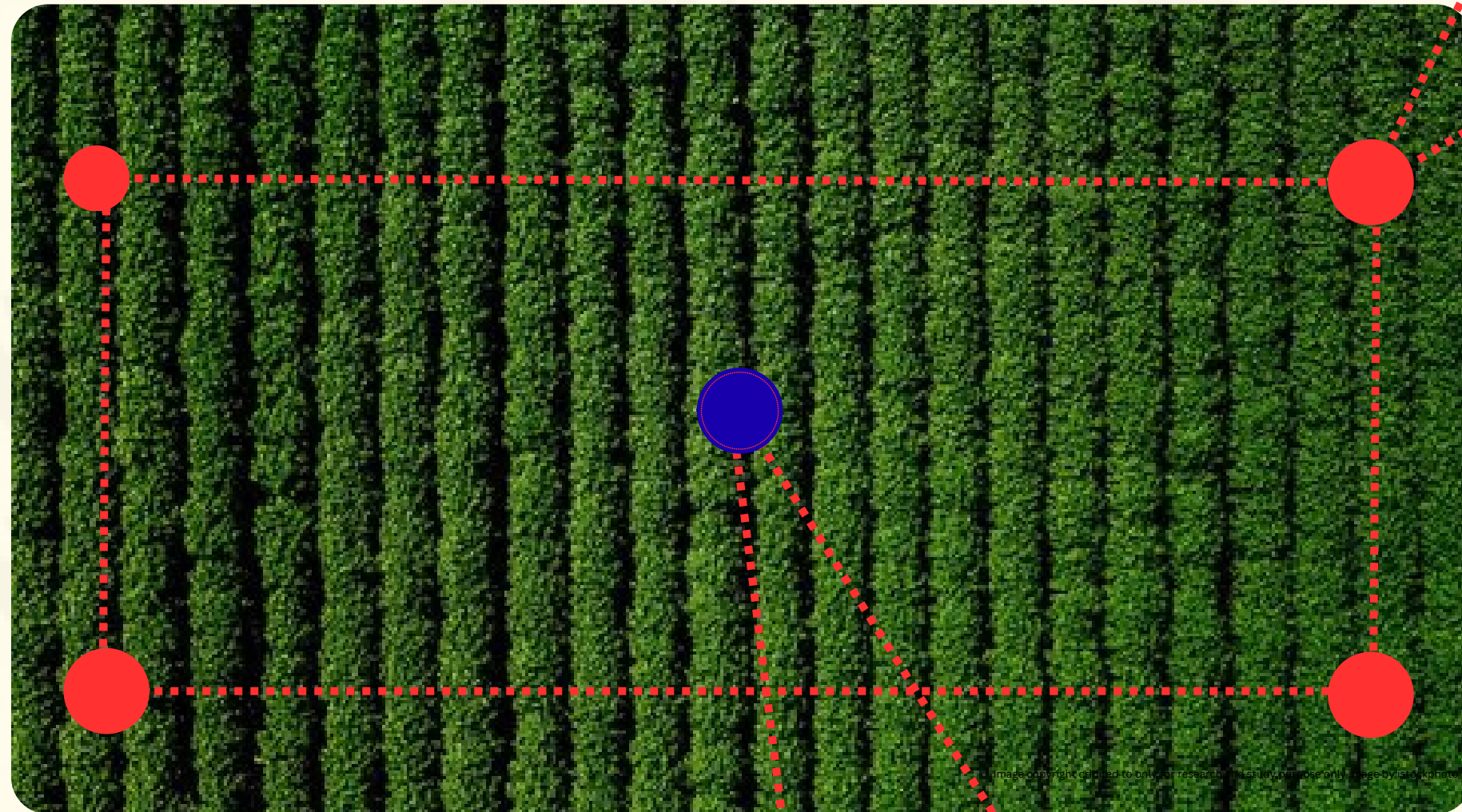


Data collection → **track animal movement patterns**



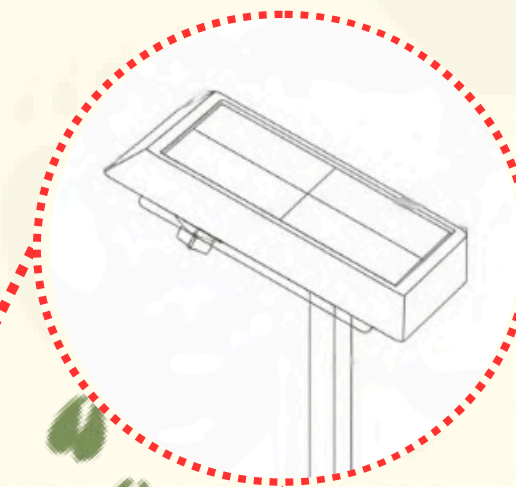
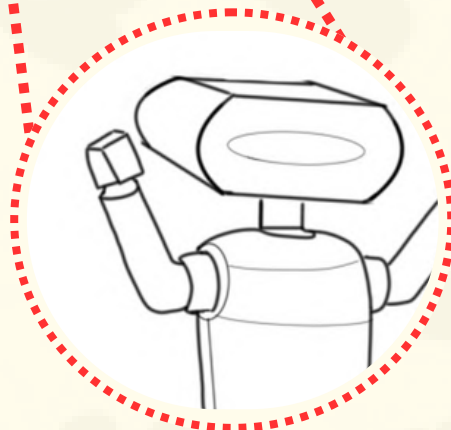
**Virtual Boundary Creation** using corner sensors

# How It Works



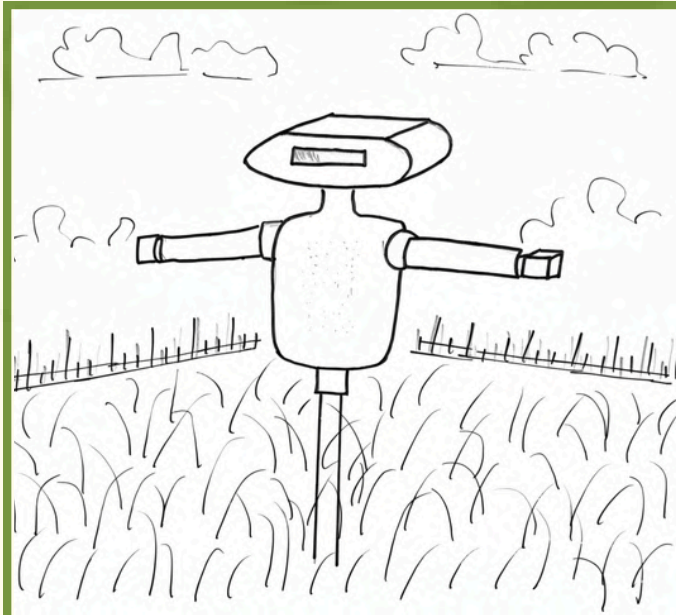
- Sensors placed at farm corners → create virtual boundary
- Animal detected crossing line
- Signal sent to central AI Farm Guard (middle of farm)
- Device activates ultrasonic/low-frequency sound
- Animal feels discomfort → leaves farm immediately

- Boundary Creator
- AI Farm Guard

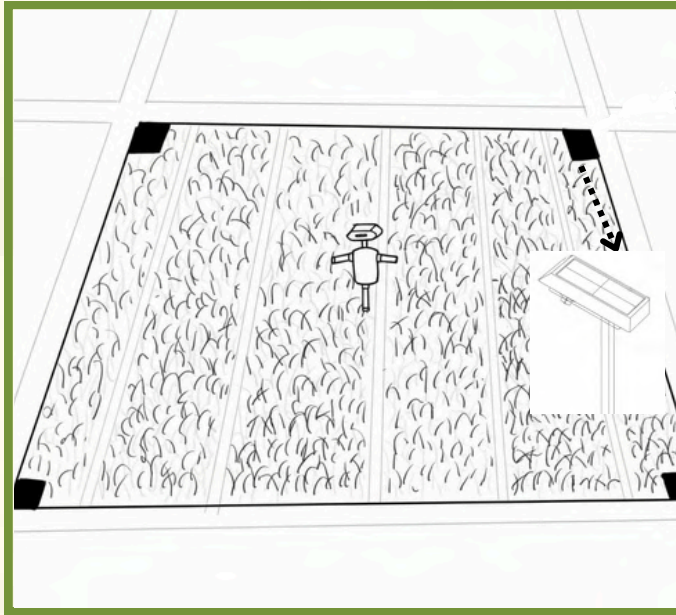




# Story Board



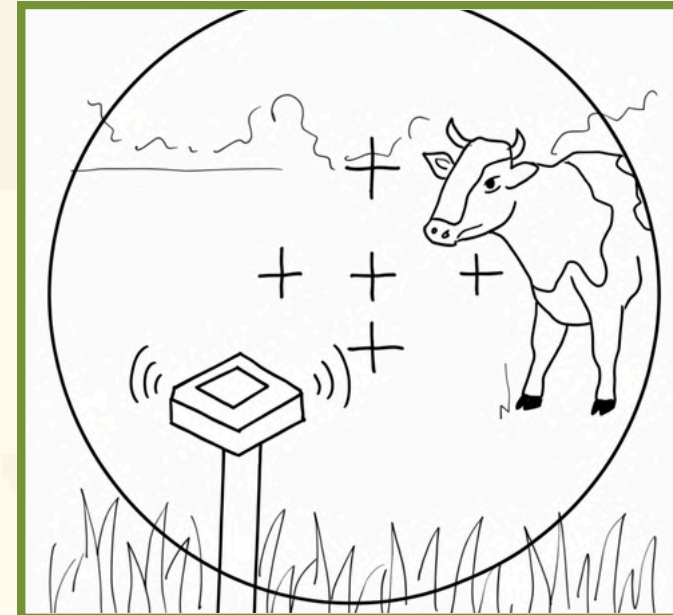
Farmer places the Farmeye



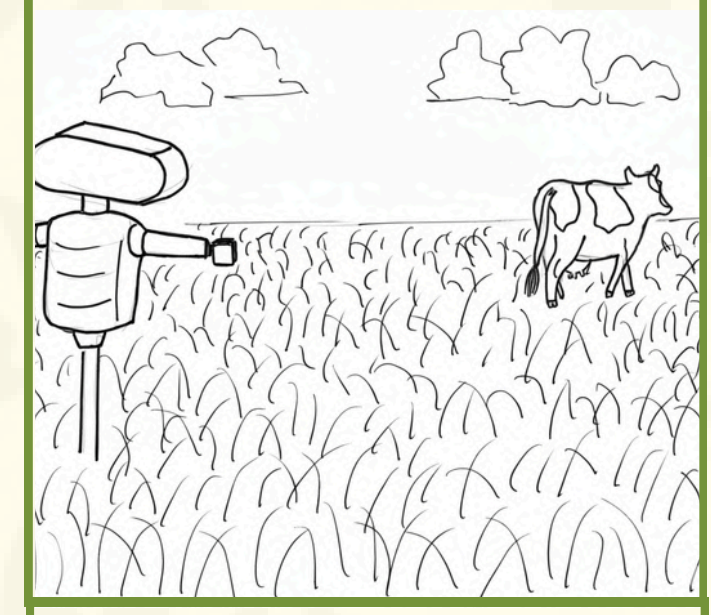
Farmer places 4 boundary creator



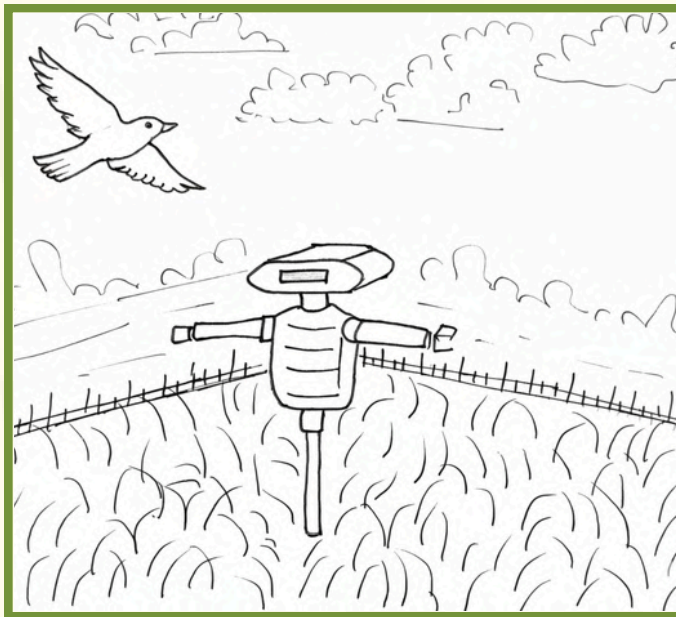
Boundary sensor detects an object and sends signal



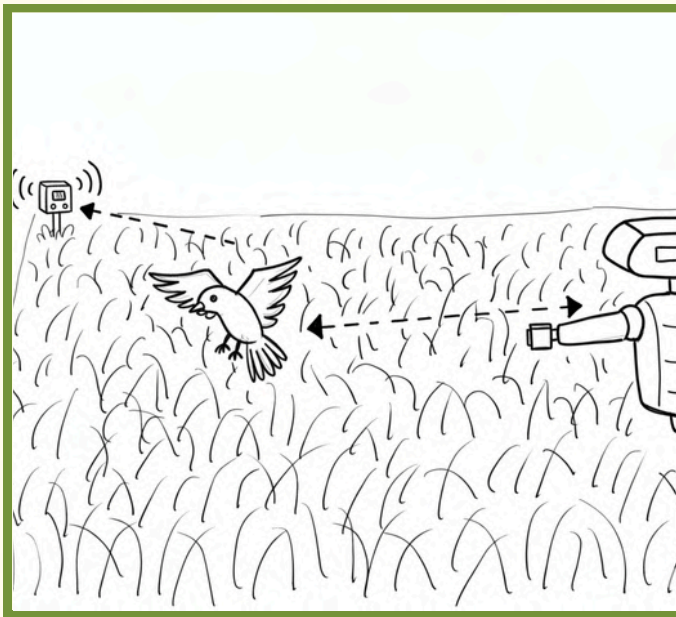
AI Camera determine which animal it is



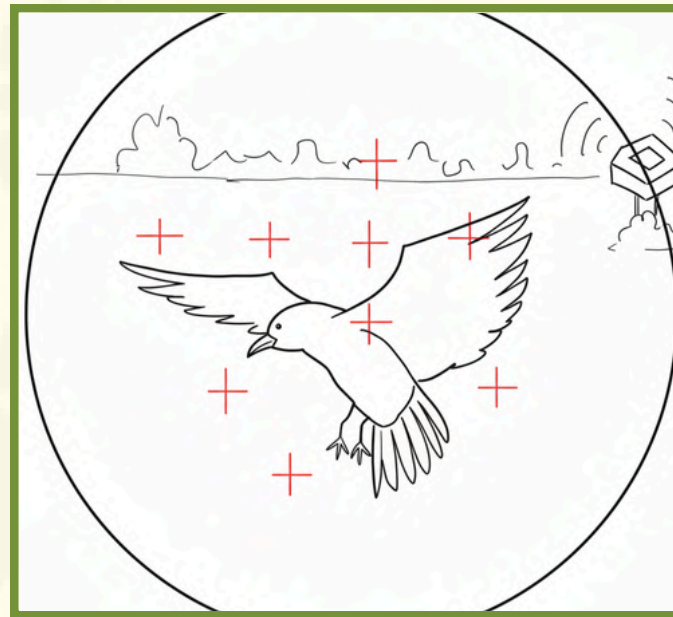
Farmeye emits frequency between 20Hz-75Hz



A bird flying near the farm



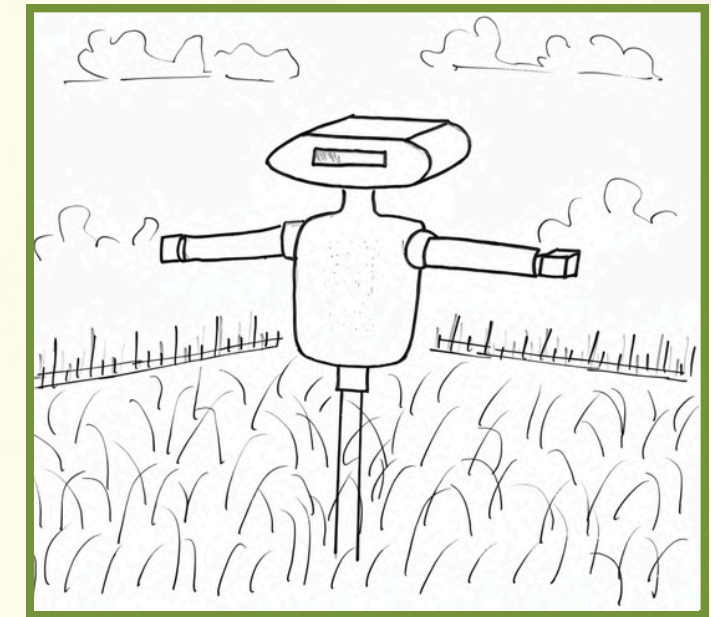
Bird flies down and sensors detect and send signal to Farmeye



AI determines which objects it is



Plays eagle voice and flaps its arms



Farmeye continuously protects the farm



# Benefits

- **Non-harmful** → no injury to animals or humans
- **Cost-effective** → no need for heavy fencing
- **AI-powered** 24/7 monitoring
- **Scalable** → small or large farms
- Sustainable → can run on powered with **solar/wind energy**

# Addressing Key Issues

- **Animal Adaptation?** → AI **rotates frequency bands** so animals don't get used to it
- Weather-proofing? → **Rugged sensors** & waterproof AI unit
- Power Issues? → Solar backup for continuous operation
- Human Safety? → Frequency **range safe for humans**

# Conclusion

**FarmEye is not just a tool**, but a companion standing guard with the farmer, day and night. By combining the power of **artificial intelligence** with **nature-friendly** energy, FarmEye creates a **shield** around farms—alert, responsive, and reliable. It reduces the farmer's worry, **safeguards** their harvest, and ensures that their dedication yields its rightful reward.

With FarmEye, we envision a future where farmers can **focus on growing**, not guarding. Where their sweat is valued, their crops are **protected**, and their lives are lived with dignity and peace of mind. FarmEye is more than a product—it is a promise to our farmers: you are not alone in this fight.