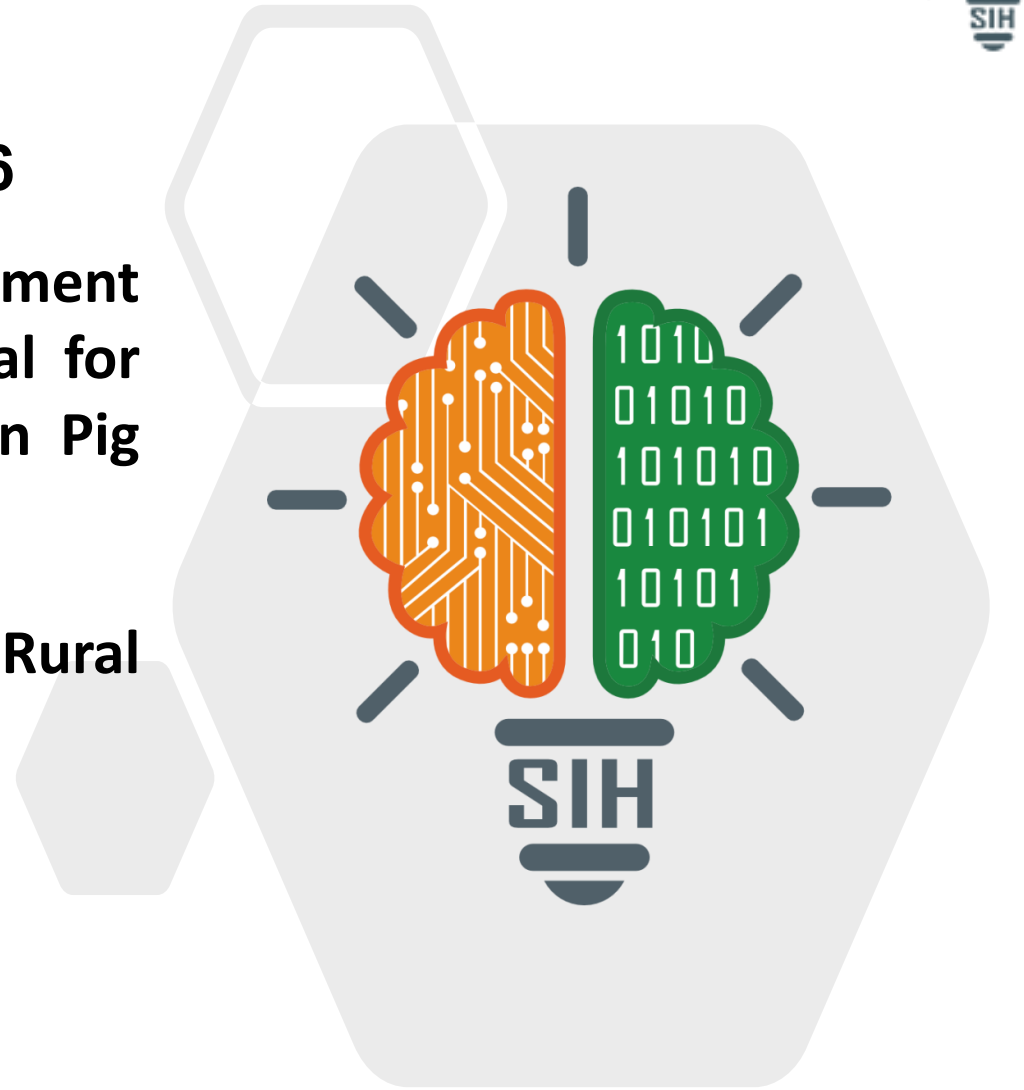
SMART INDIA HACKATHON 2025

SMART INDIA HACKATHON 2025

- **Problem Statement ID – SIH25006**
- **Problem Statement Title- Development of a Digital Farm Management Portal for implementing Biosecurity ileasures in Pig and Poultry Farms**
- **Theme- Agriculture, FoodTech & Rural Development**
- **PS Category- Software**
- **Team ID: SSIH09**
- **Team Name- Mission Samadhan**



Mission Samadhan

Problem Understanding & Importance

Problem Statement

Small pig and poultry farmers lack easy-to-use biosecurity tools for data recording, risk assessment, and compliance, leaving them highly vulnerable to disease outbreaks that threaten livelihoods and food security

Importance

Protects farmers' income and rural livelihoods

Ensures steady food supply and market stability

Prevents huge economic losses from outbreaks

Reduces risk of zoonotic diseases affecting people

Target Audience/Stakeholders

Farmers (especially smallholders with limited resources)

Veterinarians & Extension Workers (who provide field support)

Government Agencies & Policymakers (responsible for disease surveillance and compliance)

Mission Samadhan

Proposed Solution (Overview)

SMART INDIA HACKATHON 2025

A farmer-driven digital platform where poultry and pig farmers record their own farm data to get instant biosecurity risk insights, training, and compliance support.

Proposed Solution:

- Personalized Content: Training videos & guides tailored to farmer's land.
- Inclusive Access: Mobile app for smartphone users, Help Centers for others.
- Smart Advisory: Data-based pesticide & chemical recommendations with safety.
- Emergency Alerts: Instant notifications + inspection support during outbreaks.
- Awareness Programs: Regular training & team-driven updates for farmers.

How it Directly Addresses the Problem

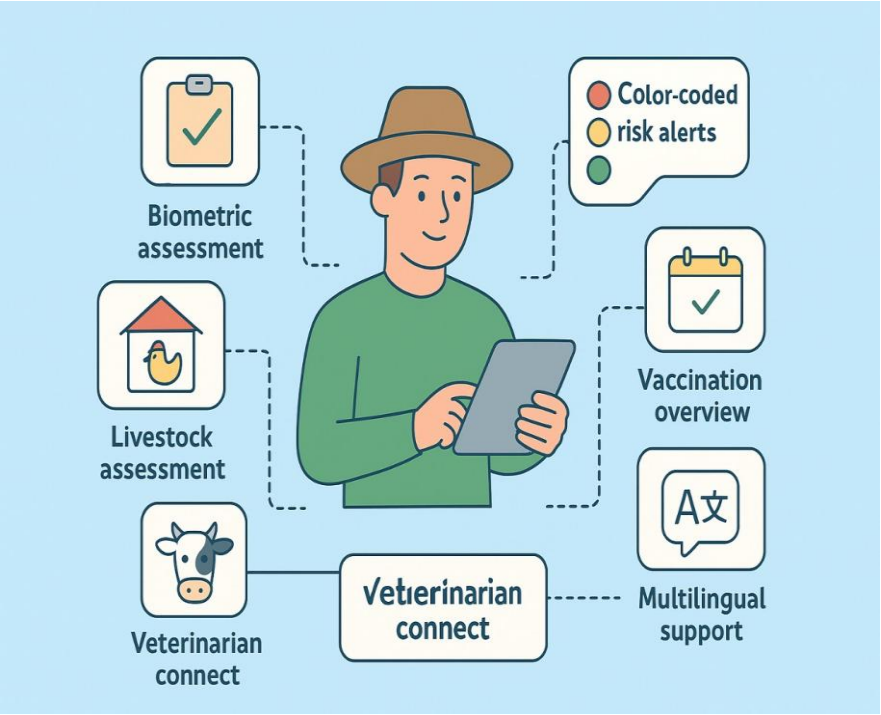
Empowers farmers to self-assess and manage biosecurity with actionable feedback while enabling authorities to track risks at scale.

Mission Samadhan

Innovation & Uniqueness

SMART INDIA HACKATHON 2025

- **Biometric Assessment** → Track animal health using digital records & unique IDs
- **Color-Coded Risk Alerts** → Simple Red–Yellow–Green system for quick understanding
- **Vaccination Overview** → Schedule, reminders, and history for each flock/herd
- **Livestock Assessment** → Regular health scoring based on farmer's data input



Mission Samadhan

TECHNICAL APPROACH (Part 1)

SMART INDIA HACKATHON 2025

Methodology and Implementation:

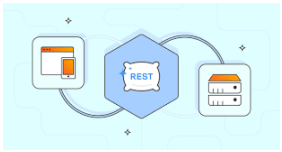
- System Design – plan app, dashboard, and alert modules.
- Prototype Development – build core features: farmer data, advisory, emergency help.
- Intelligent Features – add AI for risk prediction and maps for outbreak tracking.
- Testing & Validation – pilot test with real users, refine system.
- Deployment & Improvement – launch on cloud with offline/SMS support, improve with feedback.

Tech Stack

Flutter/React

Node.js

Python



Rest APIs

PostgreSQL

HTML, CSS, JS

API:

- Authentication API
- Language & Voice Support API
- Geolocation API

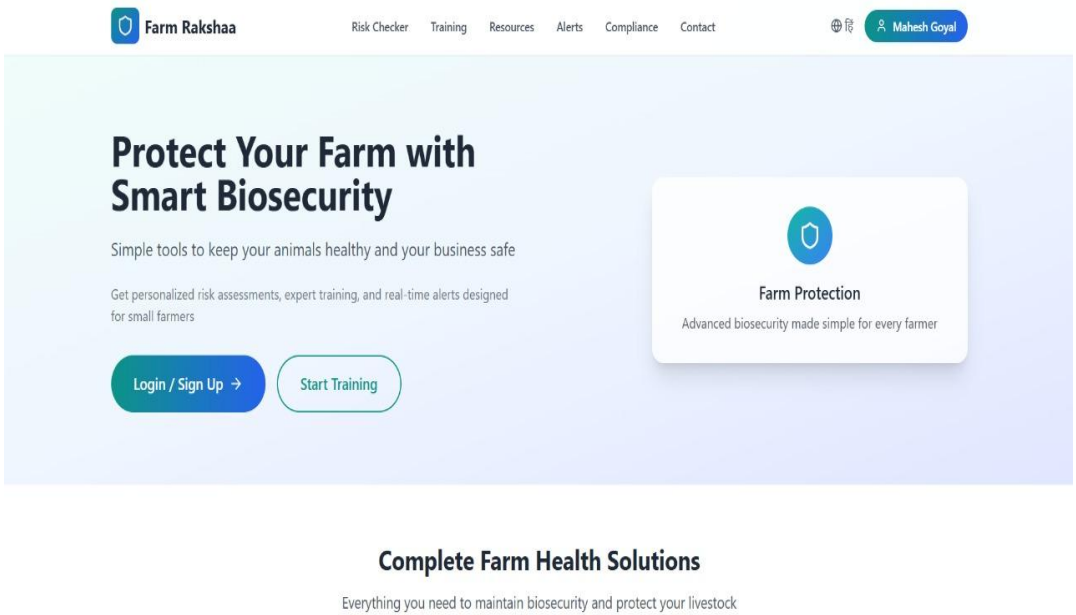
Mission Samadhan

Technical Approach (Part 2)

SMART INDIA HACKATHON 2025

System Architecture

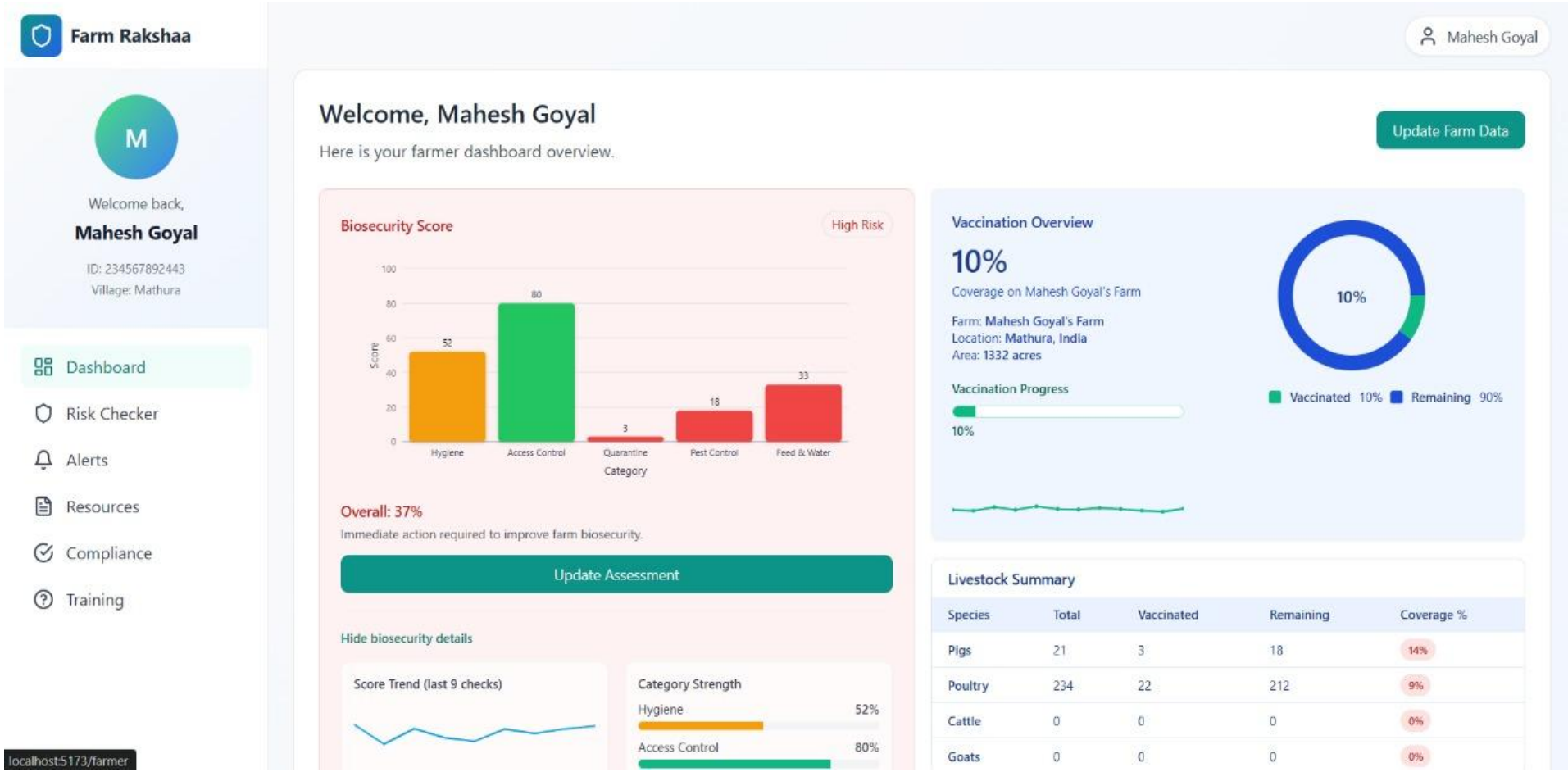
- Vet App / Team Dashboard: map view, quick access to farmer profiles (by ID), alerts per village, case triage, chat/teleconsult.
- Admin & Policy Portal: compliance tracking, compartment reports, user & role management.
- Notification Service: templated push/SMS/IVR/email; color-coded alert rules engine.



Mission Samadhan

Dashboard Architecture

SMART INDIA HACKATHON 2025



Mission Samadhan

FEASIBILITY AND VIABILITY

SMART INDIA HACKATHON 2025

Leverages What Exists

Uses farmers' basic smartphones & local help centers, avoiding costly new infrastructure.

Reduced Expenditure

Preventing outbreaks is cheaper than dealing with large-scale disease spread.

Challenge: Limited Smartphone Access
Overcome: Help centers for offline farmers.

Challenge: Slow Emergency Response
Overcome: Real-time alerts & quick inspection requests

Mission Samadhan

IMPACT AND BENEFITS

Impacts:

- Public Health Safety – Prevents zoonotic diseases (animal-to-human) → safeguards society.
- Knowledge Sharing Community – Farmers can learn from each other's case studies & solutions.

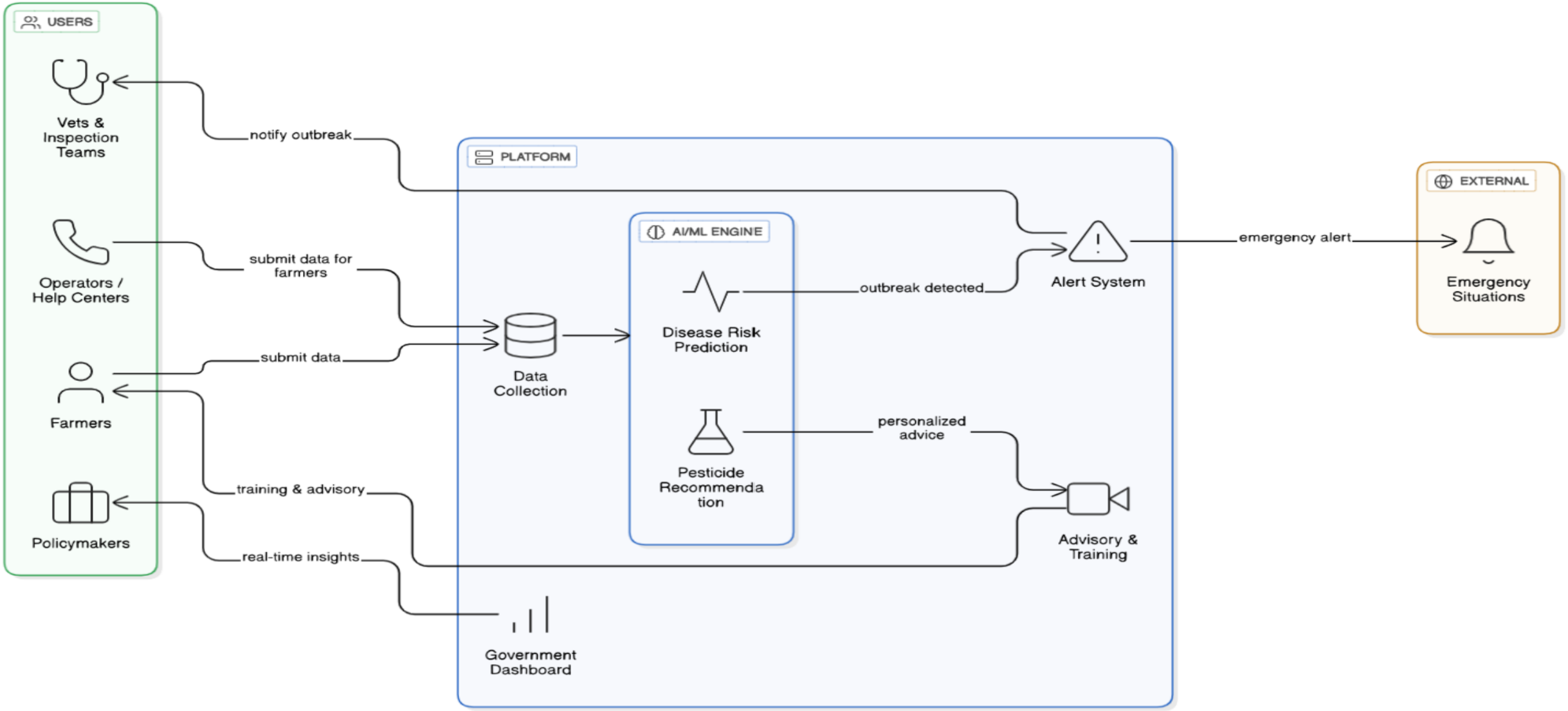
Benefits

- Farmer Creditworthiness – Verified digital farm data can help farmers get loans/insurance easily.
- Boosts rural economy by creating demand for digital services & training centers.
- Healthy poultry and pig farms mean that meat, eggs, and related products reaching the consumer are safe and free from major disease risks.

Mission Samadhan

Flowchart Representation

SMART INDIA HACKATHON 2025



Mission Samadhan

RESEARCH AND REFERENCES

Research:

Based on Digital Agriculture Mission (2021–25), FAO/ICAR biosecurity studies, and AI/ML applications for farm disease prediction. Models like Digital Green and e-Choupal prove localized training and ICT adoption.

References:

Digital Agriculture Mission 2021–25FAO (2019) – ICTs for AgricultureICAR (2020) – Biosecurity in AgricultureSpringer (2022) – AI/ML in FarmingDigital Green Programs

Mission Samadhan

Conclusion & Team

Conclusion

A smart yet simple digital platform designed for both rural smallholders (non-technical) and veterinary experts (technical).

For non-technical farmers: easy-to-use tools like color-coded risk alerts, biometric-based assessments, vaccination reminders, and multilingual guidance.

For technical users (vets, authorities): detailed dashboards, compliance tracking, farm-level data analysis, and policy-support insights.

Aims to bridge the knowledge gap by making advanced biosecurity practices accessible, practical, and farmer-friendly.

Our team plays a big role because we combine different skills like tech, veterinary knowledge, design, and data handling.

We understand the real problems farmers face and create simple but smart solutions like risk prediction, biometric checks, and instant alerts.

- **Akshat Agarwal (Team Leader)**
- **Gaurav Mittal (Frontend)**
- **Anushree Agrawal (Frontend)**
- **Mahesh Goyal (Backend)**
- **Ravi Shankar Kumar (Backend)**
- **Gun Saxena (UI/UX Design)**