INTRODUCTION & APPLICATIONS OF DRONES WITH AI & EARTH SCIENCE

Aerobott Introduction

Aerobott is a Mumbai-based Indian UAV Manufacturing , **GIS, Survey Mapping** & Training company. Corporate offices in Mumbai. Along with branches in Baramati , Chandigarh and Jaipur
A ***team of 50+ highly motivated & talented professionals*** Dedicated for delivering quality AI Drone Services DGCA approved RPTO to expand the Drone Flying School Industry
Partnered with Govt of Uttar Pradesh and Maharashtra, Creating professional drone solutions for ***businesses and public***

Mission

To revolutionize the drone industry by designing & developing innovative tech driven,reliable & sustainable Drone Solutions

Vision

Transforming drones with **10X** better products & **50 %** lower cost, redefining possibilities in AI-powered aerial innovation.

Drone Tech Solutions Private Limited × CSIR–CEERI In collaboration/ Relation

Drone Tech Solutions Private Limited, in strategic collaboration with CSIR–Central Electronics Engineering Research Institute (CSIR-CEERI), has jointly developed indigenous, high-performance drone technologies aligned with India's Atmanirbhar Bharat vision.

Jointly Developed Solutions

Drone Flight Controller: Designed for agriculture spraying drones and crop inspection UAVs, optimised for stability, precision, and mission reliability.

Flight Controller Carrier Board: Custom-engineered carrier board supporting modular integration, scalability, and industrial-grade performance.

Mini Drone Platform: Indigenous mini UAV developed for training, research, and inspection applications, emphasising lightweight design and efficient control architecture.

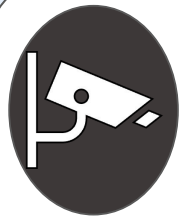
Collaboration Value

1. Indigenous design & development
2. Research-backed, field-ready UAV solutions
3. Scalable platforms for agriculture, inspection, and R&D use cases

Our Core Competence

- **Mining** - Can be used in volumetric data capturing of ore, rock and minerals storage which is extremely difficult to measure manually
- **Infrastructure** – Industrial Inspection, Site planning audit etc.
- **Energy & Utilities** – Remediation and site monitoring, Inspection of underwater intake pipe, survey etc.

- Compilation of Plant Count
- Calculation of Fair crop loss percentage
- Crop Supervision
- Crop Maintenance



Homeland security / Military not getting valuable insights on time at times can be a serious security concern

- RPTO Training to pilots
- Schools & Colleges training on Drone Technology.

Our Products

Agriculture Spraying & Crop Inspection

1. Applications : Spraying & Crop Inspection
2. Endurance : 20 minutes
3. Range ; 1 Km
4. Buddy system : Master - Slave Dual control
5. Payload : Spraying tank 10 Litres
6. Features:
    A. Multi failsafe product
    B. Low maintenance
    C. Geo-fencing capability

Training drone

1. Application: Training RPTO drone
2. Endurance : 20 minutes
3. Range : 1 Km
4. Buddy system : Master - Slave Dual control.
5. Features :
    A. Multi failsafe product
    B. Low maintenance
    C. Geo-fencing capability

GIS Mapping drone

1. Applications: GIS Survey grid mapping
2. Endurance : 60 Minutes
3. Range : 2-5 Km
4. Buddy system : Master - Slave Dual control.
5. Payload : 20 - 61 MP camera (Compatible)
6. Features:
   - A. Construction B. Land survey
   - C. Mining D. Linear mapping
   - E. Lidar mapping

Surveillance Drone

1. Applications: 3D Surveillance (Lidar) Homeland surveillance
2. Endurance : 60 min
3. Range : 2 -5 Km
4. Buddy system : Master - Slave Dual control
5. Payload : 20-61 MP camera
6. Features :
   - A. Lidar B. Day surveillance
   - C. IR & D. Thermal

In Development Process

AEROBOTT

CSIR-CEERI

Yet to reveal

Drone Flight Controller (STM32 H7 Series)

The drone flight controller is developed using the STM32 H7 high-performance processor, enabling real-time flight control, fast sensor processing, and precise stabilization. It is designed for agriculture drones and crop inspection UAVs, offering reliable performance, low latency, and scalability for industrial drone applications.

Drone Flight Controller Carrier Board

The carrier board is engineered to support advanced UAV operations with Power Selection Module integration for enhanced airspace awareness and regulatory compliance. Its modular and expandable architecture allows seamless integration of communication, navigation, and safety systems for professional and future-ready drone platforms

Light wing drone (Educational Platform)

The mini drone is an indigenously developed educational UAV designed for basic drone flying and hands-on learning in schools and colleges. With a flight time of approximately 5 minutes, it provides a safe, lightweight, and practical platform for understanding UAV fundamentals and pilot training.

Drones in relation with AI & Earth Science

Crop monitoring

1. Used to **monitor crop health** using **NDVI** and **plant stress mapping** for Govt references and **Insurance purpose**.
2. Detects **early signs of disease, nutrient deficiency, or water stress.**
3. Helps in **precision farming by guiding irrigation and fertilizer plans.**
4. Maps field variability for **yield prediction and farm planning**.
5. Monitors **crop growth stages throughout the season**.
6. Supports **damage assessment after natural calamities** (flood, drought, hailstorm) for f**aster insurance claim verification and government compensation surveys.**
7. Creates **historical crop health records to compare season-to-season performance and improve long-term farm management** decisions.
8. Enables **targeted intervention (spot treatment) instead of full-field spraying, reducing chemical usage and operational costs while improving sustainability.**
9.

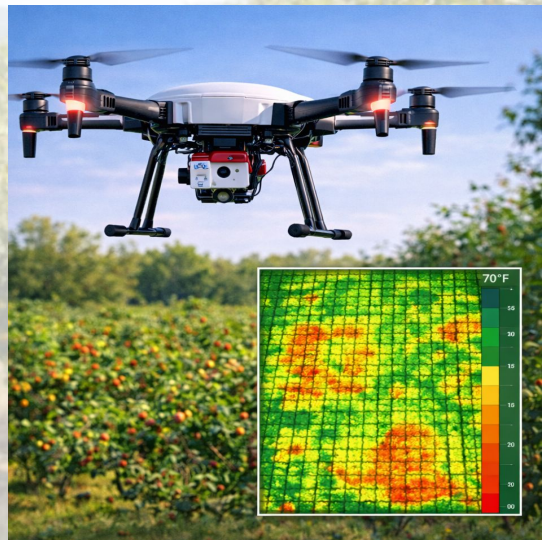
Drones In relation with AI & Earth Science

Ripeness Monitoring & Yield Estimation

1. **AI-based fruit detection and counting** helps estimate total yield accurately before harvest.
2. **Ripeness classification using color and spectral data** supports optimal harvest timing for better quality and market price.
3. **Block-wise productivity mapping** helps plan labor, storage, and logistics in advance

Detecting Tree Stress & Disease Early

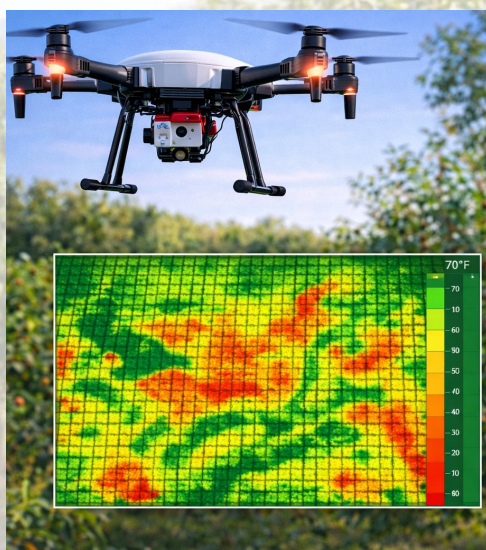
1. **Multispectral and thermal imaging** identifies water stress, nutrient deficiency, and pest attacks before visible symptoms appear.
2. **Early detection reduces crop loss** by enabling timely targeted treatment instead of full-orchard spraying.
3. **Health alerts and zone marking allow farmers** to monitor high-risk areas regularly and take preventive actions.



Drones In relation with AI & Earth Science

Precision Spraying & Pollination Monitoring

1. **Targeted spraying reduces chemical usage** and ensures uniform coverage only where required.
2. **Flight path optimization ensures canopy-level application**, improving spray efficiency and minimizing drift.
3. **Pollination activity monitoring helps assess flowering success** and identify areas with poor fruit set.



Mapping Orchard Variability for Farm Planning

1. **Zonal productivity maps identify low and high-performance** areas within the same orchard.
2. **Supports variable-rate irrigation and fertilization plans** based on actual field conditions.
3. **Improves long-term orchard design decisions**, such as replanting, spacing, and crop variety selection.

AEROBOTT- Agriculture Drone Market release.

With the mission of empowering Indian farmers through affordable technology, we are launching our agriculture drone in the Indian market at the lowest possible cost, ensuring precision farming is accessible to every farmer.

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Market release Product at 2,00,000 INR Coming soon

Thank You