AEROLANCE PVT.LTD

SPACE, DEFENCE, MILITARY,CIVILIAN

AN INTRODUCTION TO UAV

The concept of Unmanned Ariel Vehical has been extended its uses well beyond than before, in various fields ranging from Military, Civilian and Commercial purposes. We will discuss the various uses of this UAV or ROP or UAS based on its mission requirments.

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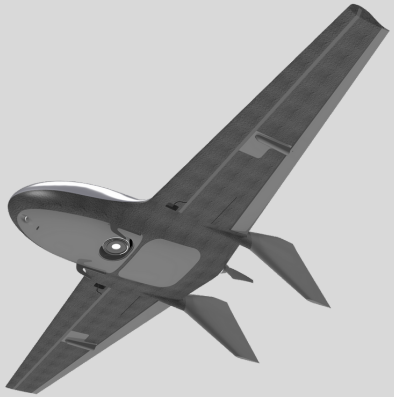
UAV classifications

MULTIROTOR



FIXED-WING

SINGLE-ROTOR

HYBRID

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MULTIROTOR

CLASSIFICATION

Bicopter

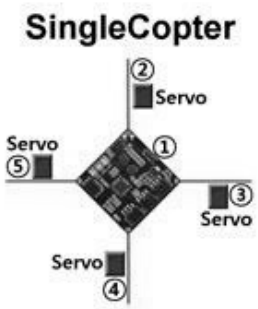
Tricopter

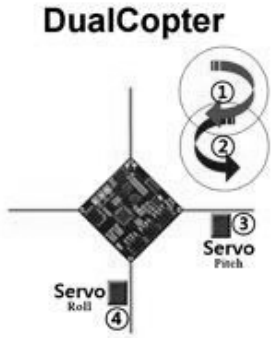
Quadcopter

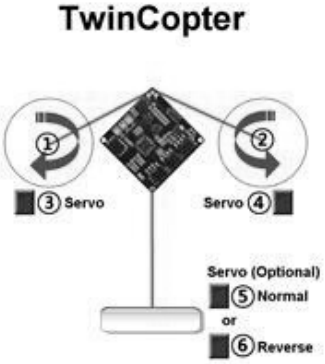
Pentacopter

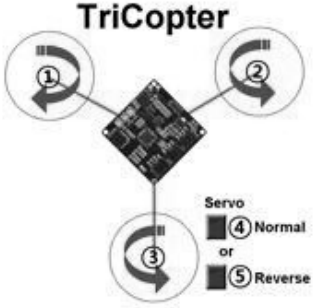
Hexacopter

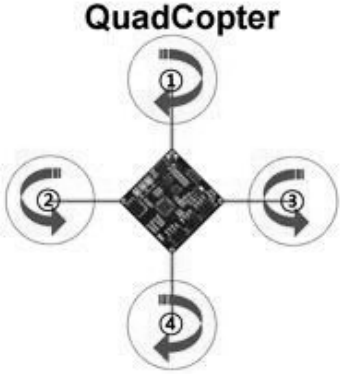
Octocopter

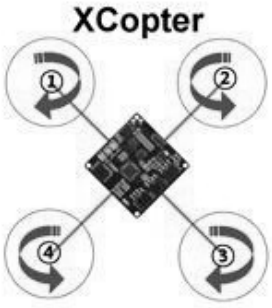


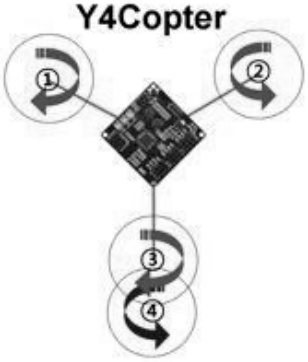


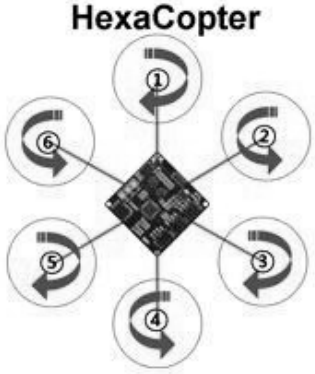


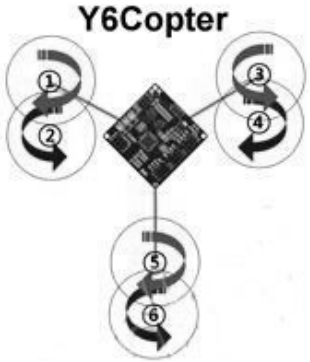


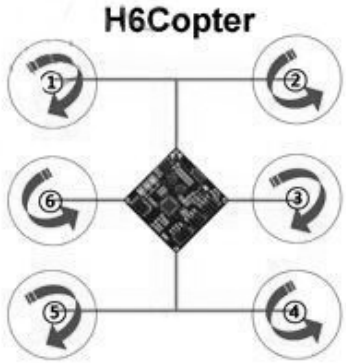












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FIXED WING UAV

CLASSIFICATION

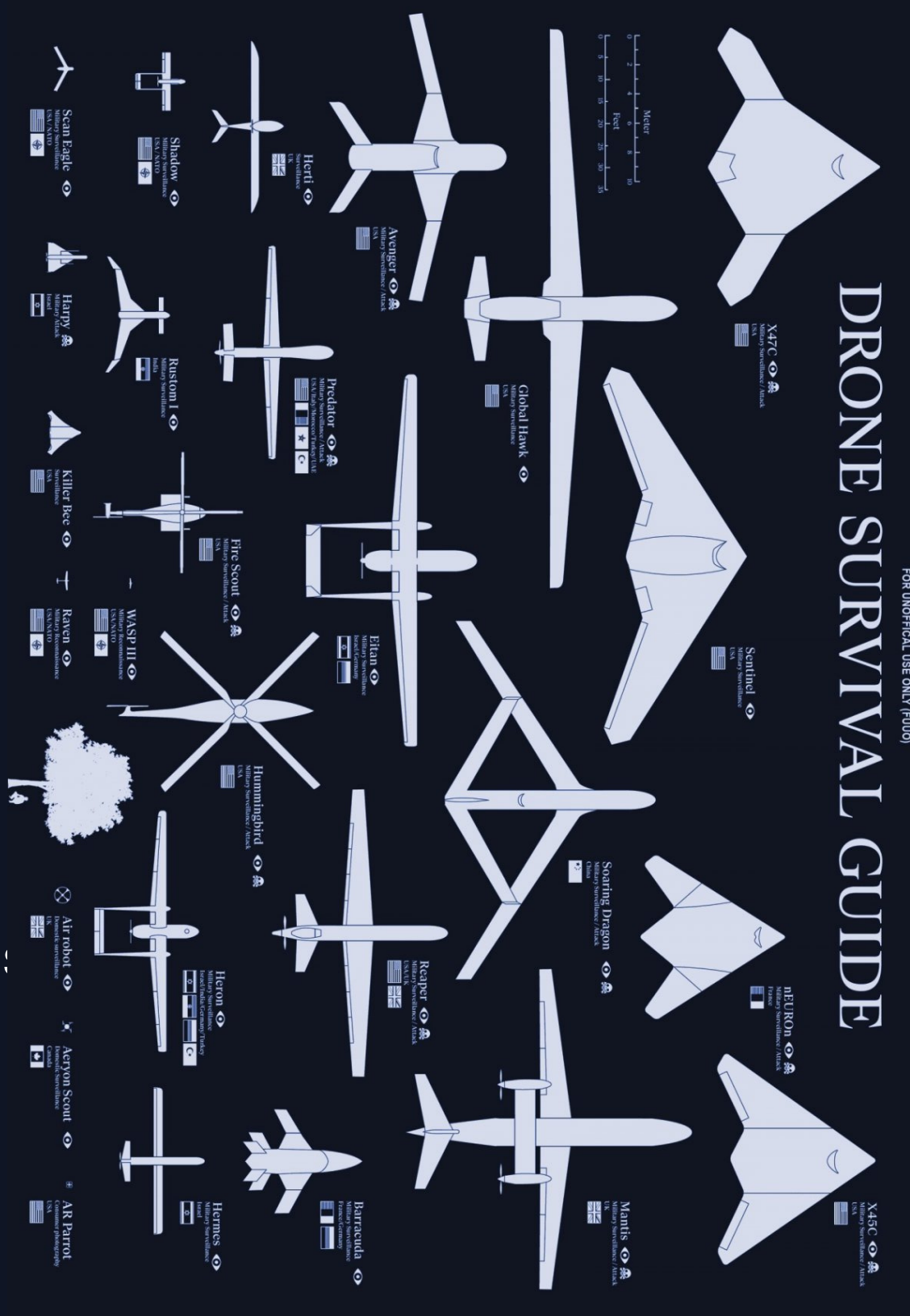
Low cost close-range UAVs

Close-range UAVs

Short-range UAVs

Mid-range UAVs

(BVR)Beyond Visual Range UAVs



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COMPARISON OF MULTI-ROTORS

FACTORS	TRICOPTER	QUADCOPTER	HEXA OR HIGHER CONFIGURATIONS
PAYLOAD	since it has three motor it has a lesser payload capability	Powerful enough to add accessories	The payload capability of this category is very high when compared with others hence, suitable for logistics, transportation and other heavy payloads
CONTROLABILITY	Higher yaw authority	Better manuverability	Higher stability
SPEED	Better speed, as three motors gives constant thrust at all situiations	Lesser speed when compared to Tricopter	Faster than quadcopter due to thier higher motor configuration
RANGE	Higher range	Lesser range due to higher power consumption motors	Requires an extra battery to increase its range, and other methodlogies to increase range
REDUNDANCY	Poor - redundancy	Poor - redundancy	Better redundancy over other configurations, safety provided through additional motors
COST	Low-cost	Less - expensive	Expensive and higher replacement costs

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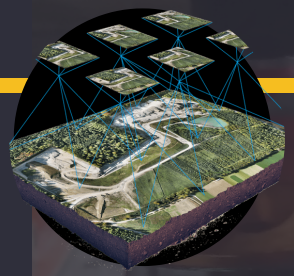
APPLICATIONS OF DRONES



Intelligence, Surveillance, and Reconnaissance (ISR)

Product Delivery

Firefighting & Disaster Management, Maritime Security

Agriculture, Mining, Wildlife & Forestry

Academics & Research

ABOUT

ISR a key factor in Geospatial Intelligence - GEOINT, for a growing technology GEOINT, imagery, imagery Intelligence (IMINT) and geospatial information.

Basic consideration for an ISR drone/UAV/UAS is its ability to maintain anonymity and collect a larger annoying of data in a shower period of time. And also other systems that can be Embeded, depends in the mission requirement.

One of the major application for Civilian application is its ability to capture high resolution images that is suitable to bring out data in any format, as DEP, Othromosaic, Contours, DEM, Ground Control Point (GCP) etc

S

INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE (ISR)

R

01

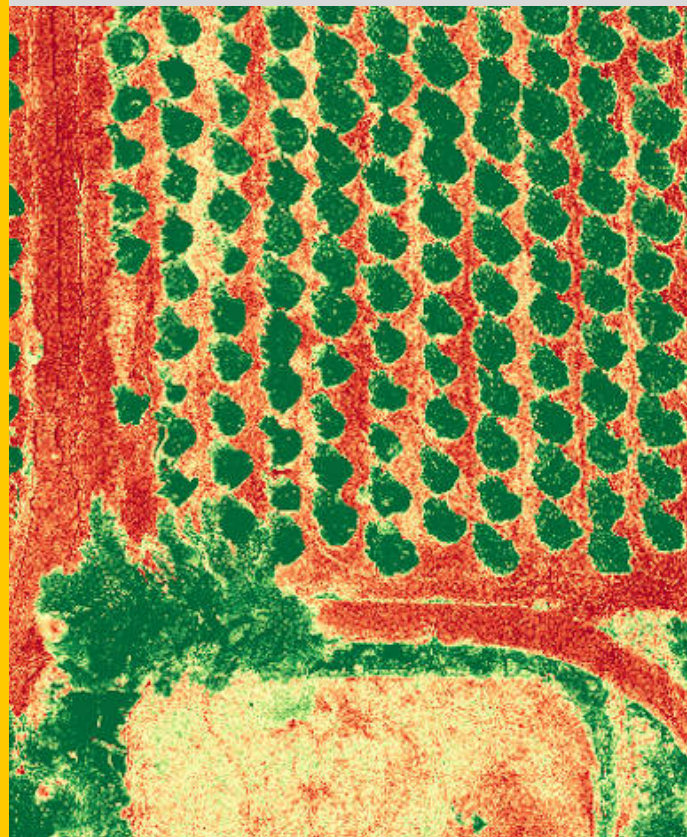
Land surveying and ariel mapping

02

DEM (DIGITIAL ELEVATED MODEL), CONTORS, CLOUD POINTS FOR GENERATING 3D MODEL OF THE LAND OR CONTRUSCTION SITE, OR THE TRAGET AREA

03

COLLECT A LARGE SET OF DATA LIKE MULTISPECTRAL IMAGES, THERMAL IMAGES ETC. MAINTING ITS ANONYMITY



ABOUT

The demand for more faster and secure delivery of an payload that can reach remote areas or even closer areas has been the most sought after objective for sectors of logistics and posting services.

Its now possible to transfer products from the seller to the customer's door step in a very short period of time.There by cutting down a lot of time consuming processes that is faced when it is on land.

PRODUCT DELIVERY

01

Faster delivery of medical supplies at stipulated time

03

In logistics, it can be used for faster delivery, and also delivers in remote locations

02

Effective delivery of Goods required during natural Calamities

ABOUT

The capability of autonomous flight and payload carrying capacity with ariel view and other essential systems to carry-out major tasks with ease makes the UAS to play vital roles in giving an upper hand to Fire and disaster management, maritime security, in the time or crisis and general operations.

FIREFIGHTING & DISASTER MANAGEMENT, MARITIME SECURITY

01

Assess Risk and Danger

03

Conduct Investigations

Create Pre-Fire Plans

02

Respond to Disaster and Save Lives

ABOUT

Precision agriculture, mining, wildlife and forestry are fields that requires longer period of data acquisition and updating those data in short intervals. They also demand higher end equipment for taking deeper analysis on plant-life, wildlife health assessments and also early detection of events and pre-planning in mining, agriculture, wildlife and forestry

AGRICULTURE, MINING, WILDLIFE & FORESTRY

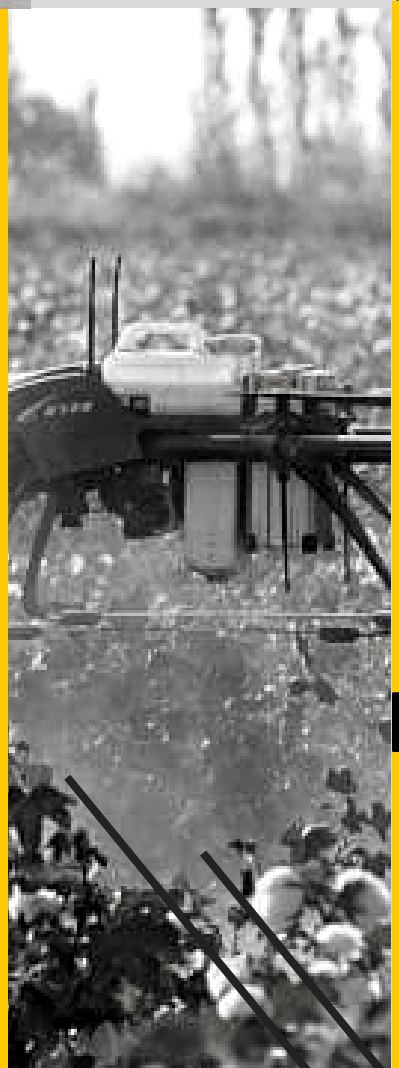
Farming

01

Soil and Field Analysis

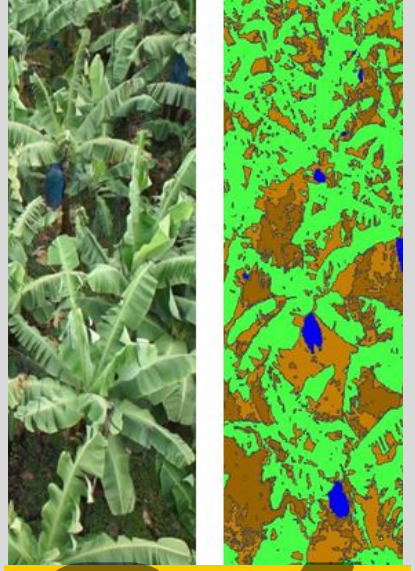
02

Seed Planting



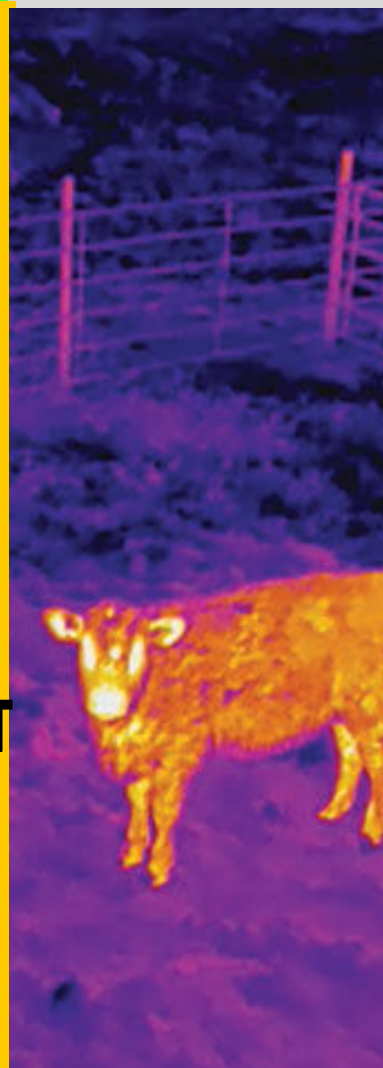
03

Crop Spraying & Spot Spraying



04

Irrigation Monitoring and Management



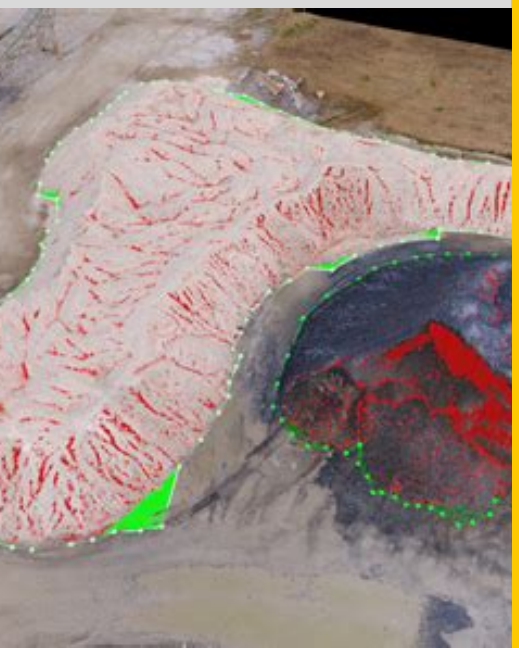
05

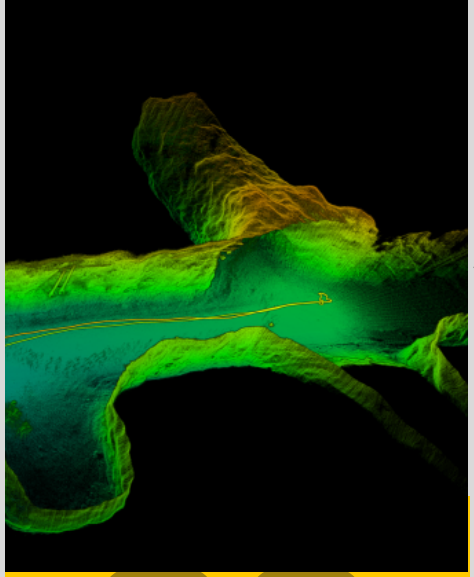
Real-Time Livestock Monitoring

Mining

01 HAUL ROAD

Slope, turning angles and length helps to understand and optimizing the haul roads to cut-short fuel and maintaining regulatory limits.



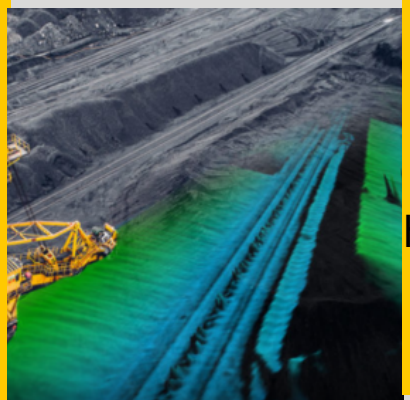


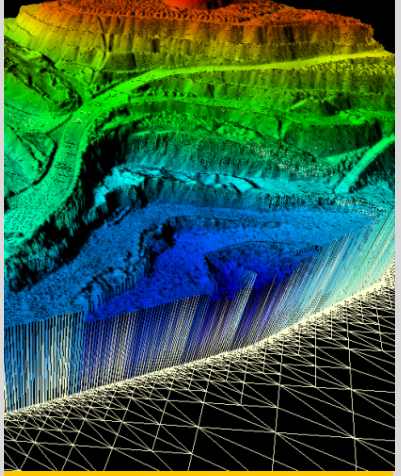
02 WATER AND SEDIMENT

prevent or determine the operations disruption due to unwanted or uncontrolled water or sediment flow. Flow and tailings pond operations can be modelled with DEM

03 ASSESSMENT BEFORE AND AFTER DRILLING OR BLASTING

Allows you to better manage resources such as the number of trucks needed improves planning for future blasts, cutting the cost of explosives, time on site and drilling



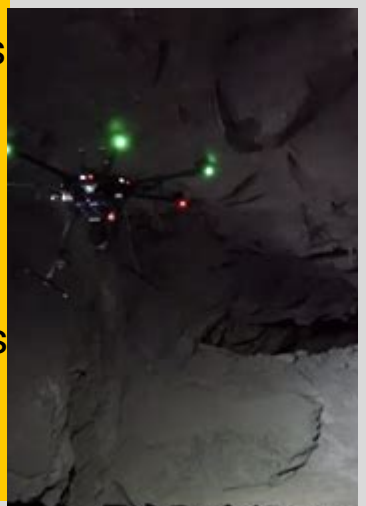


04 HAZARD IDENTIFICATION AND MITIGATION

Inspect difficult-to-access or high-traffic areas of the sites, without endangering human personnels

05 MINING EXPLORATION

Helps to generateDEM, orthographic high resolution image datas and can reach more sophisticated locations than a manned exploration.



Wild life & Forestry

01

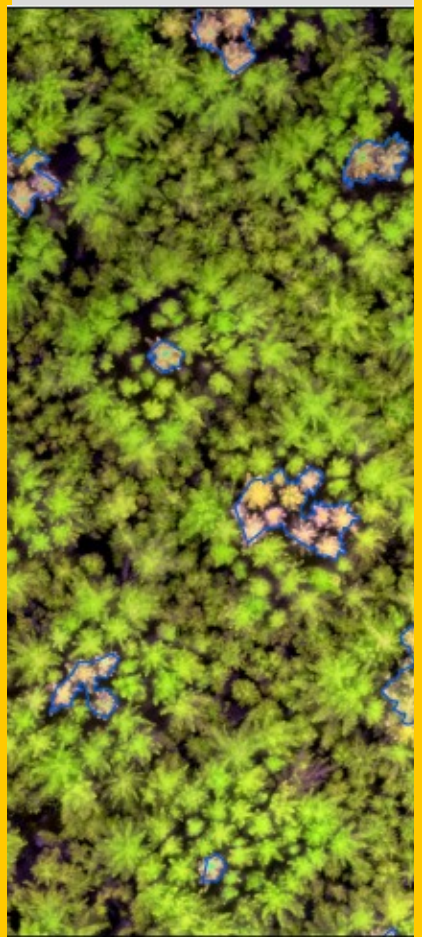
IMPROVE FOREST MANAGEMENT PLANNING

02

RESTORATION MANAGEMENT AND PREVENT FOREST FIRES

03

DETECT AND MANAGE PESTS & DISEASES

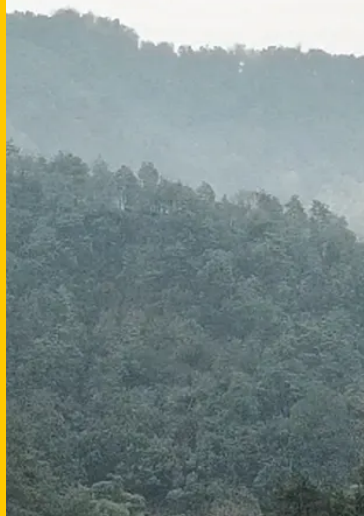


04

FOREST SECURITY

05

RESEARCH



ABOUT

Drones, UAV, UAS all began from the university researches, which led to revolutionary discoveries, and will continue making a major impact in almost all the fields. Hence, the use of these Ariel robotics/UAS/UAV/drone/ RPS keeps on increasing with innovative ideas.

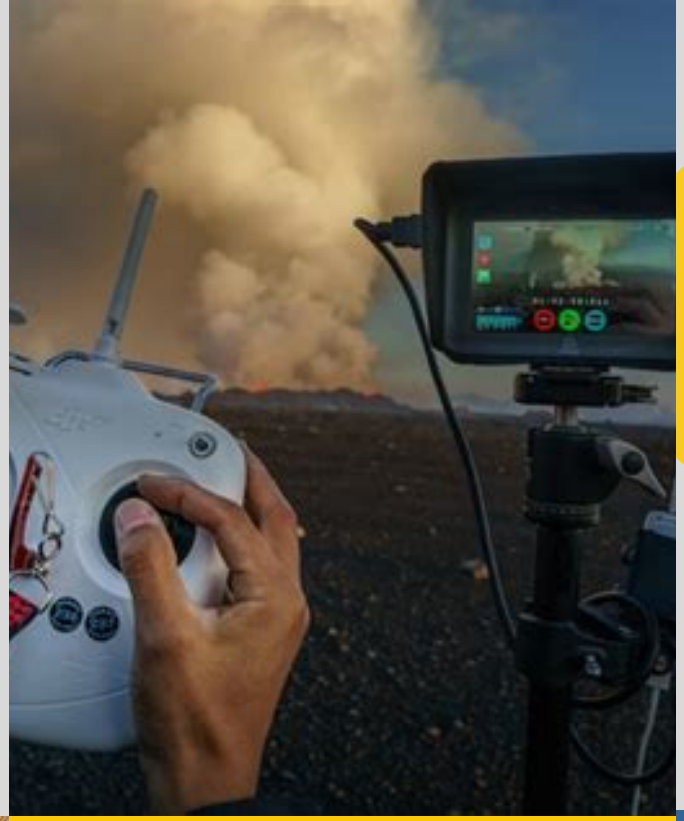
A

ACADEMIC AND RESEARCH

R

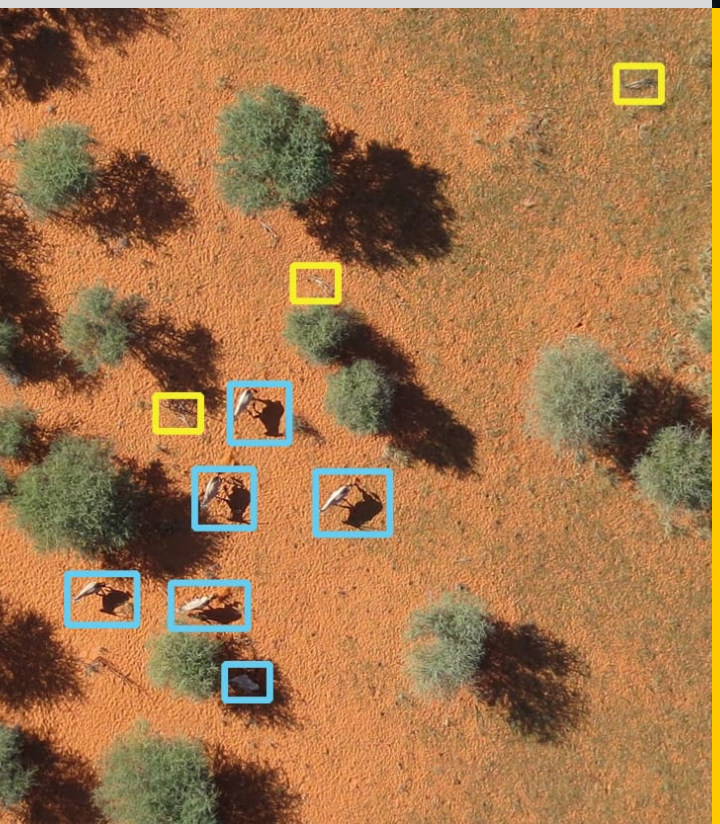
01

STUDY LAND ANIMAL BEHAVIOURS & SEARCH FOR NEW SPECIES OF ANIMALS AND PLANTS



03

EXPLORE UNDISCOVERED TRIBES



02

VOLCANOLOGY EXPERIMENTATION

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