



TERRA DRONE

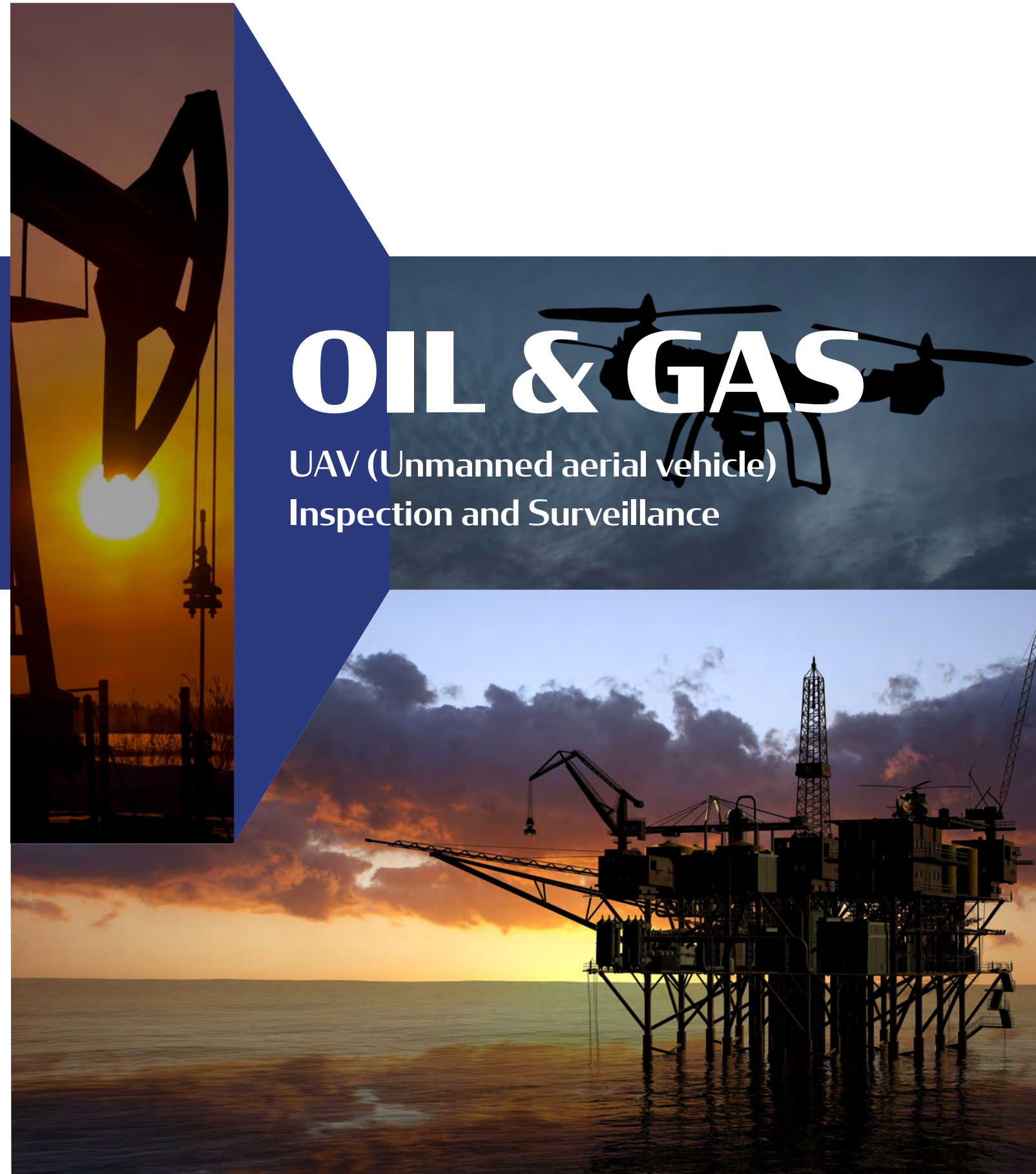
Terra Drone Corporation

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# OIL & GAS

UAV (Unmanned aerial vehicle)  
Inspection and Surveillance

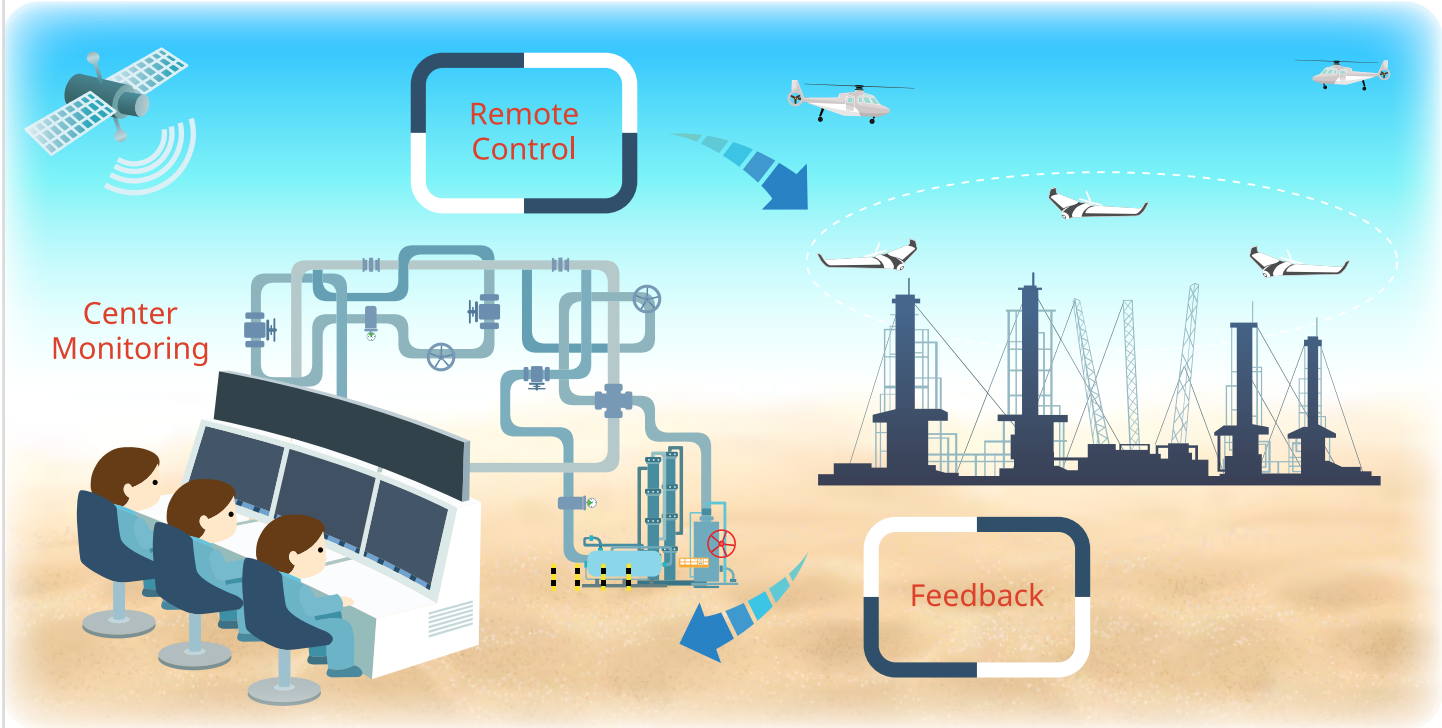




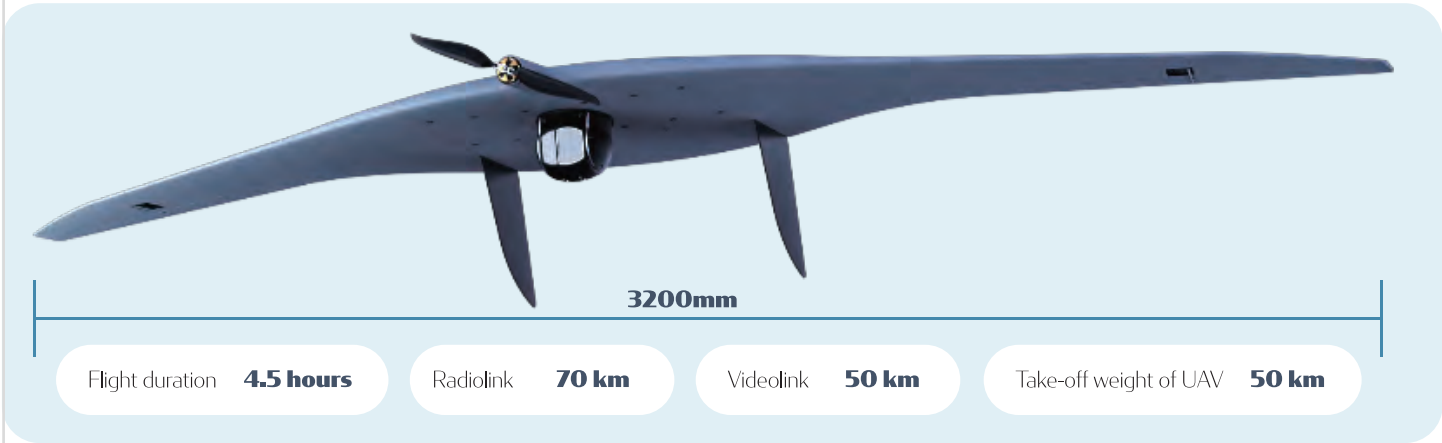
# Pipeline Monitoring

Solution is appropriate for operations where real-time or near real time video observation and surveillance capability is of utmost importance.

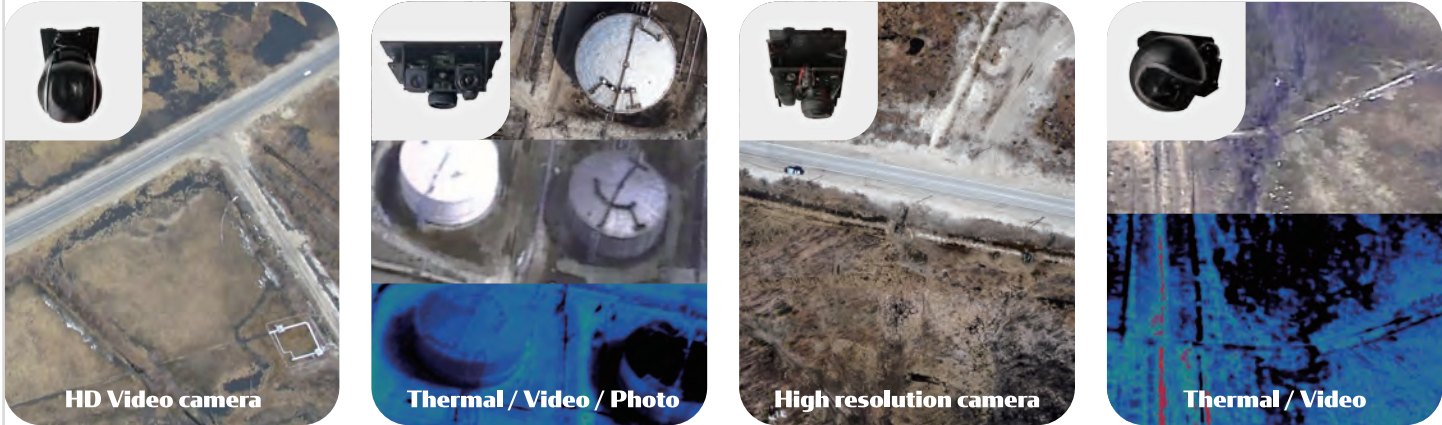
## UAV Monitoring System for Safety Production of Oil and Gas Pipeline



## System Component



## Possible payload



## What we can do

### Monitoring & Surveillance

Terra Drone provides long range monitoring solutions for illegal activities. Our solution can detect features of persons, cars which intend to steal resources from the assets. Also capable of tracking, following those ones suspected to do some illegal acts.



### Terrain Analysis

We provide terrain analysis which are relevant for pipeline or Oil & Gas assets construction and managements. Those outputs can be used to check ground movements, hazard detection.



### Monthly Change Monitoring

Early detection of slips, erosion, encroachment, subsidence and geohazard

### Project Visualization

The Viewer processes and analyzes remotely sensed (satellite, airborne, and UAS) information that allows owners and contractors to view their projects in a 2D and 3D web-mapping environment

### Hazard Detection

Hazard Detection combines remotely sensed data with machine learning to identify potential project hazards such as slips, erosion, karst formations, subsidence, etc.



# Asset Management

Terra Drone Group has completed over a few hundreds visual and thermal inspections for flare stocks, onshore and offshore assets around the world.



STEP  
01

## Data Capturing

Terra Drone will capture data for you.



### Flare Stack Inspection

Our Inspections ways give time effective benefits.  
We do not require to stop operation of flare stock.  
The inspections detect damages such as rusts, cracks, movements of components installed with the asset.



### Underdeck Inspection

UAV Inspection for under deck gives benefits such as time and risk reduces.  
Besides, it can also reduces making scaffolding that was needed to reach to an inspection point.



### Internal Tank Inspection

Terra Drone can undertake UAV internal inspections on large tanks on operational vessels such as FPSOs, bulk carriers, tankers and onshore oil storage tanks.



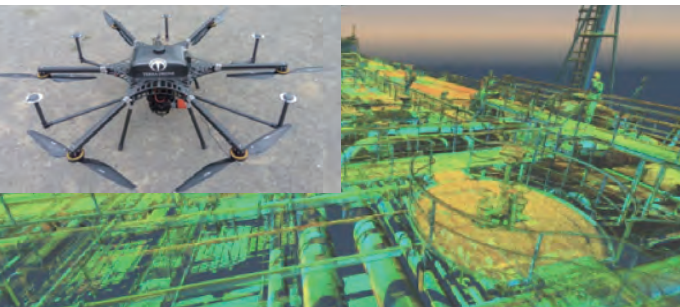
### Structural Inspection

Terra Drone's UAV inspection technique provides structural inspections of high or difficult to reach structures, which are faster and safer than conventional access methods.



### Aerial Survey

Terra Drone uses drones for aerial surveys and mapping.  
With these pictures we create 3D digital elevation and terrain models as well as orthophoto mosaics.



### Piping Modeling

LIDAR is particularly useful in power plant renovation projects because it brings the power plant design back to the office rather than requiring work in the field. The laser scan accurately locates existing pipes..



STEP  
02

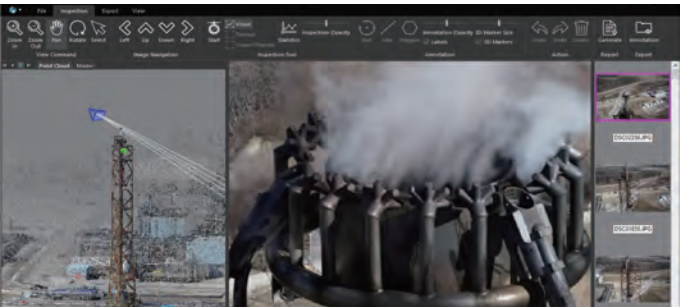
## Data management

Terra Drone will analyze the data for you and share with you.



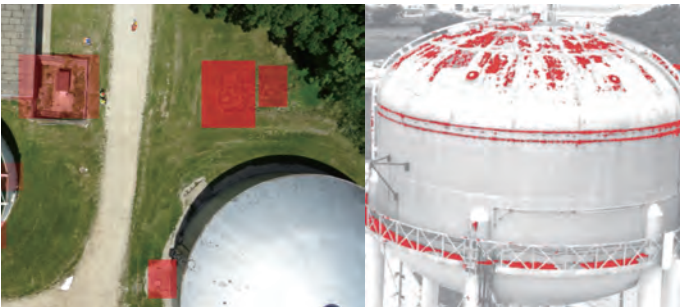
### Terra Drone Data Management

Drone do not provide remote inspection tools, just raw data (photos and vdeo).  
Terra data platform is a platform that uses Machine Learning to allow Oil and Gas Companies to identify and measure asset anomalies, such as corrosion and cracks.



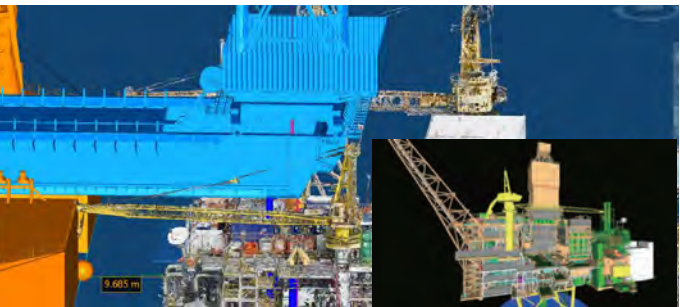
### Easy Anotation

Effortlessly mark issues in images to point out where actions need to be taken. Annotated images are the key to automated fault detection.



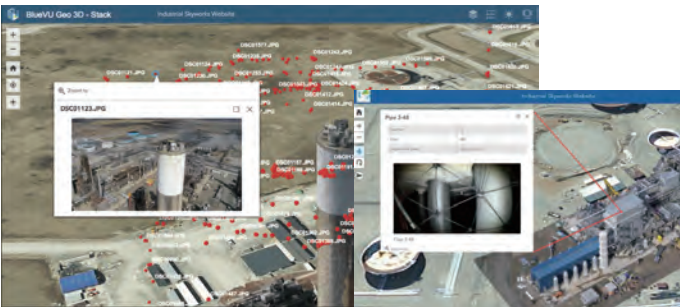
### Artificial Intelligence

The AI is trained for various scenarios and can swiftly review all of your images. When a potential problem is detected, the AI marks the problem with an annotation for your approval. If the AI detects the same issue across several images, it will automatically link them together if a 3D model exists. Computer Vision is available by request.



### Digital Twin

Terra Drone India data processing team has capabilities to create the precise 3D CAD modeling from the point cloud data (captured by UAV).  
• Enables virtual asset management  
• Creating dagirtal twin data to manage on the data platform

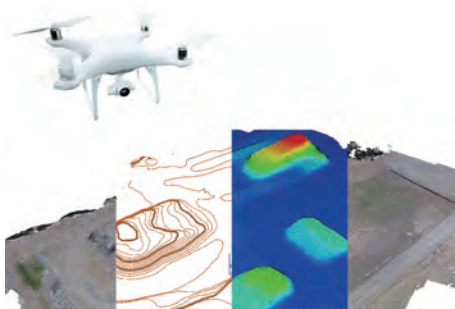


### Sharable Reports

We have web based management system.  
It's essential to share information about issues with team members, customers and service teams. To accommodate this need, we created the report module.



## Terra Drone Product Lineup



### Terra UTM

Unmanned Traffic Management (UTM) system  
-Remotely control multiple drone with single system  
-Real-time monitoring from the control center



### Terra Inspection

Terra Drone Inspection delivers faster and better insights about your assets by using an image optimization engine that automatically organizes, analyzes and selects the best images and vantage points.



### Terra Mapper

Terra Mapper is a photogrammetric software solution for 2D image processing. It's especially designed for Land surveyors and Civil engineers. They capture data with any drone, any camera.



### Terra LiDAR System

LiDAR is a measuring technology that uses laser beams to measure terrain and object heights. The benefit compared to standard photogrammetry is that the laser beams can detect smaller objects and penetrate vegetation.



### Terra SLAM

Terra SLAM is a laser scanning drone solution designed for underground mines, tunnels, and similarly dark and constricted zones. Equipped with collision avoidance, use cases include large pipes, underground tanks, unmanned facilities, and dangerous structure.



### Terra Explore

Inspect dark, hard to access spaces with the drone ball UAV. The 4K camera and thermal camera makes building, wind turbine, and engineering inspections straightforward, without endangering workers..

## What we can do



We are a leading commercial drone service company headquartered in Japan and having regional office in around the world.

We provide out of the box end - to - end solutions across domains.

We also helps companies to carry out inspection of complex job sites,

such as those in mining, oil and gas extraction, and power line

Having successfully completed numerous UAV based projects,

we have multiple ongoing Government projects,

most of which have not been carried out before

## Our Client

