

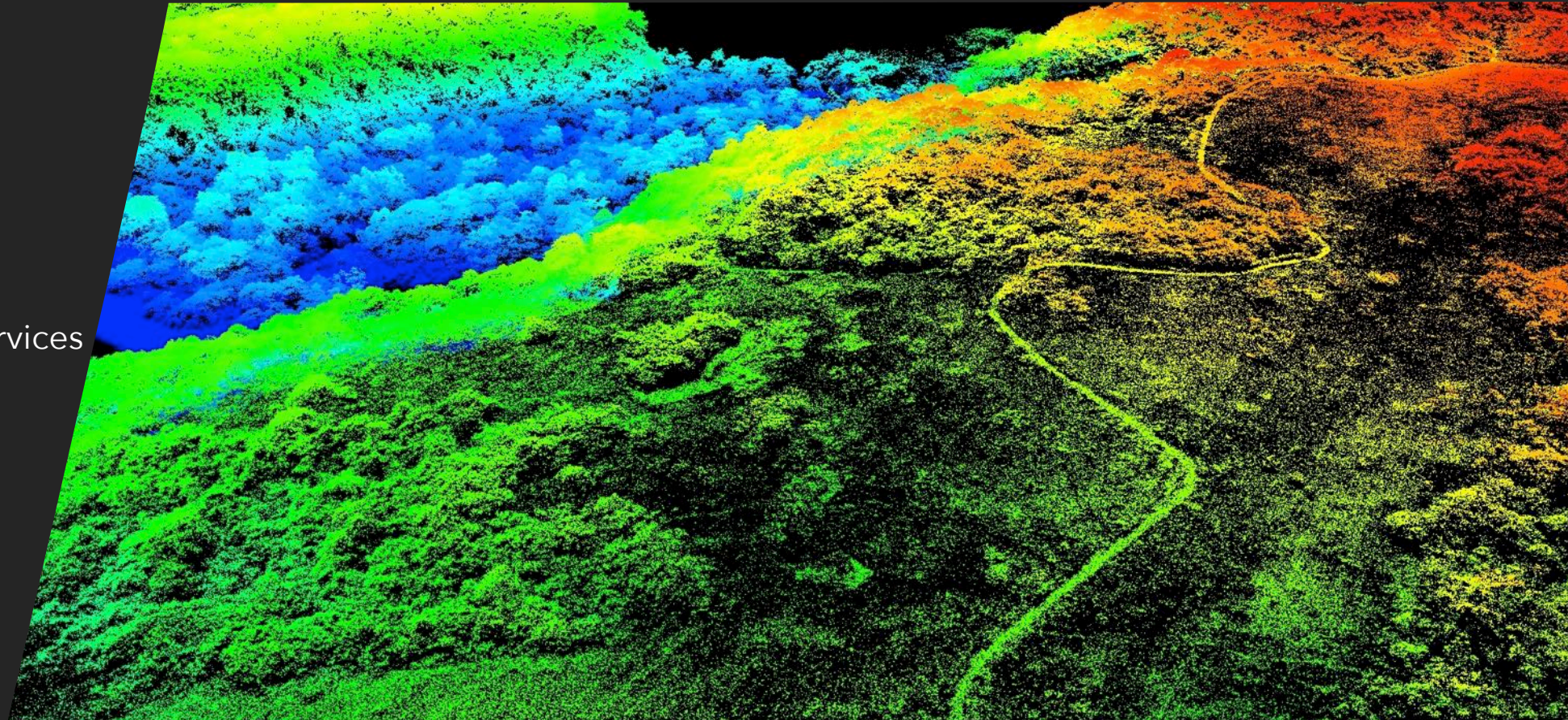


MSDI

COMPANY PROFILE

2020

High-end Mapping Drone Services
Lidar & Photogrammetry



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COMPANY PROFILE

2020





OUR GLOBAL SERVICES

"we work without borders"

MSDI is providing Drone services throughout Indonesia. No matter which island your project is located, we always have a solution for you.

After the project, we will monitor and follow your needs, providing support even deep into the jungle.

Additionally, we provide services in all South East Asia, with projects in Thailand, Malaysia, Singapore.

We are licensed as **European & Indonesian Drone Pilot Certificate** operators, qualifying us to fly in Europe, Indonesia, and many other countries

As we say, we have no borders and will be proud to work beside you, even if it's on the other side of the world.



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TIMELINE

August, 2015 Company Design

This moment marked our first flight and the moment of inception for the adventure ahead. We spent the next year building the concept

September, 2017 1st Anniversary

The business is growing fast and we have expanded to 3 drones. We were signing far more professional clients for commercial projects. We proposed a unique service in Bali: drone rental without operators.

September, 2019 Creation of MSDI

We created the MSDI brand, specializing in industry services by drones. Our drone fleet has expanded to 7 drones.

September, 2016 Launching Of Bali Drone Production

Bali Drone Production was launched in September 2016 with our first clients - mostly tourism and real estate promotion. We had only one drone and it was the beginning of the adventure.

March, 2018 New quality level reached

The first INSPIRE 2 arrived in the company. In this industry we must continuously invest in new equipment to provide the best quality and service possible for our customers. The INSPIRE 2 was an benchmark for our service to comply with the high-end film industry needs.

ABOUT US

We are passionate about drones! As lovers of drones and new technology, we have acquired years of experience since 2015.

The MSDI brand is born from the company PT. Bali Drone Production, specializing in videography and photography production services.

We have worked on such an incredible line-up of amazing projects, including work for TV-channels, production houses, industry and government, real estate promotional media, special events, and private projects for individuals.

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BEHIND **THE COMPANY**



Arnaud Denisot

Founder & Director

IT Engineer

Drone Pilot



Allycia Herman

Com Manager

Assistant Director

Lawyer Consultant



Pol Palacios

Senior Board Advisor

Strategy consultant

Director XWELLS Energy



Julien Duchaine

Technical Advisor

Energy consultant

Project Manager

BEHIND THE COMPANY

REGIONAL



Iqbal Goval

Regional Marketing Manager

Customer Relationship

Why choosing us ?



Great Customer Support

The post-project work is very important for us. It is why our clients come back as we continue to offer advice and answer your questions, even after your contract is completed.



Fast Answer & Quick Delivery

Time is precious and some projects cannot wait. We respond within 24 hours, and we deliver the final project in the shortest time.



Permit processing

For some projects, drones activities require a permit in Indonesia. We have all knowledge and experience to process permits through the Directorate General of Civil Aviation (DGCA and Airnav)



Engineering

Our team is composed of engineers ready to work on your project and provide you with the best results possible.



Licensed pilots

In our business, the drones are specialized, precision equipment. For this reason, all our drone operators are licensed by the Indonesian Ministry of Transportation.



Insurance

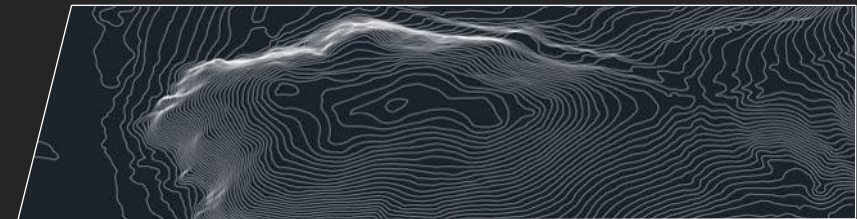
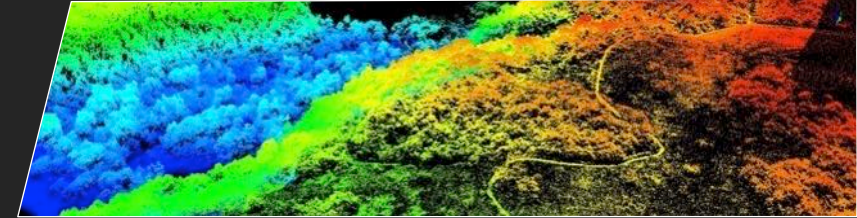
Every project is different and can contain some surprises. All our drones are covered by international insurance.



What We do ?

MSDI is providing UAV solutions for all industries and topography in Indonesia and South East Asia, This includes drone mapping, high-end LiDAR technology, high accuracy maps for real estate developments and civil engineering projects, forest management, Oil & GAS, corridor, mining, 3D modelling, archaeology, asset inspections.

We are developing agriculture services like the NDVI multispectral mapping, and solar panel inspection for megawatt sized farms using infrared camera technology.



PHOTOGRAMMETRY MAPPING

SURVEY GRADE PRECISION

UAV LIDAR SURVEY

| How **MSDI** CAN SUPPORT YOU

2X

CHEAPER

30X

FASTER

4X

DETAILED

Significant Cost Savings:


- Up to 30 times faster than ground-based land surveying
- Rapid deployment
- no land constraint (dense vegetation, difficult access...)
- Quick data collection (more than 400 Hectares per day) & quick data export, more than 650ha in 2 hours



Highly Accurate Outputs:

- Real-time visualization
- Multiple datasets recorded: images, videos, points cloud
- Large sets of outputs: aerial images, digital elevation model & topographic data, volumetric analysis, assets count
- Precision up to 1cm

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- 
- A faint, stylized map of Indonesia is visible in the background of the slide, rendered in a light yellow color against the dark blue background.
- Land / building construction
 - DEM / DTM / DSM (surface model)
 - Contour map
 - 3D building model
 - Planimetric features (streets, heights, signs, building footprints)
 - Forestry management & mapping
 - Flood modeling
 - Pollution modeling
 - Mapping and cartography
 - Urban planning
 - Coastline Management
 - Real estate
 - Agricultural cultivation
 - Transportation planning
 - Oil & gas exploration
 - Mines & Minerals
 - Archaeology
 - Cellular network planning
 - Etc..

OUR SERVICES

PHOTOGRAMMETRY

Photogrammetry is the art, science, and technology of obtaining reliable information about physical objects and the environment through the process of recording, measuring and interpreting photographic images. The sensor, habitually a camera, is different according to the job requirements: NDVI, multispectral, Infrared, RGB, etc.



The process is to stitch a set of photos of land or objects that we take with the drone, and through powerful algorithms generates a 3D volume/map. From this data, we can generate files that will be used by different trades such as architects, surveyors, analysts, engineers, etc.

Sectors



Construction



Land
Surveying



Real Estate



Agriculture



Energy



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LIDAR : THE HIGH-END OF MAPPING



High Precision
1cm



See through the
Vegetation - 5 echos



Available for different
activities



Most advanced
technology



Live streaming
on field

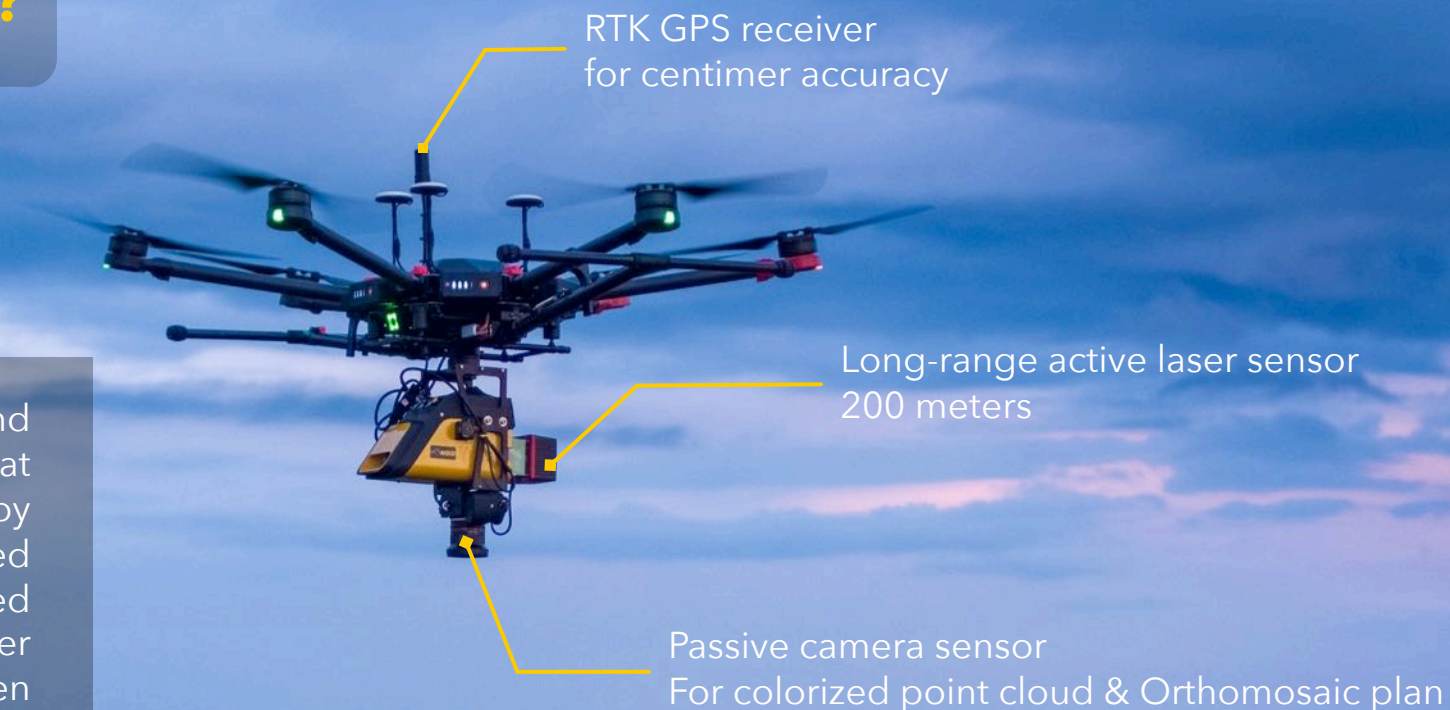


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LIDAR : HOW IT WORKS ?

LiDAR stands for « light detection and ranging ». It is a surveying method that measures the distance to a target by illuminating the target with pulsed laser light, and measuring the reflected pulses with a sensor. Differences in laser return times and wavelengths can then be used to make digital 3D representations of the targeted surfaces.



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THE BENEFITS OF USING **LIDAR** TECHNOLOGY



Multi-layer capabilities

Mapping with UAV LiDAR allows you to see through multiple layers of foliage. With our equipment, we are able to pass up to distinct 5 layers (echo) of foliage. We employ state-of-the-art technology and the laser is a certified 5 echo target.



Dense Vegetation Penetration

The 3D laser scanner is perfect for density measurement and detailed detection. We can penetrate foliage and plant-life, capturing depth data normally unattainable with traditional surveying and mapping – useful for industries such as Agriculture, Forestry, and Land Management.



Precise & detailed detection

Compared to airborne LiDAR solution, the UAV solution allows us to fly at low altitude to capture all the details and detect objects accurately. Valuable for Archaeology, Forestry, Land Management, and Energy & Utilities.



Centimeter level precision

One of the biggest benefits of LiDAR technology is the accuracy and precision. Our laser has an accuracy of 5cm and a precision of 1cm, allowing us to measure an object to the nearest centimetre and to position it to within 5cm **compared to the real world.**



Volumetrics Measurement

Due to high accuracy and high detailed maps, we are able to measure the volume contained within an area. It's perfect for mining and aggregates stockpiles, dredging, in landfills and industrial sites, or any location where volume measurement is vital.



Elevation Modeling

LiDAR data helps create high-precision 3D elevation models that deliver robust information not possible with traditional surveying. We can extract elevation data and generate contour lines. Useful for many industries, including Civil Engineering, Agriculture, Land Management, and Construction.



Cost-saving

Mapping by plane and helicopter are incredibly expensive. Using lidar is tremendous at reducing costs due to its comparatively low operational costs. Lidar reduces the time of your team in the field, waiting for the results, and because data collection and processing is faster, you save large amounts of time and money on your project



Faster

Compared to a traditional survey, the Lidar is 30 times faster! The process is simple: We plan the flight in our offices and carry out the survey in the field using our grid method, the precision data is then processed by our teams on our super-computers. There is no need to spend days or weeks in the field, because our drones take care of everything, in record time.



Reliable & Accessible Technology

Year after year the Lidar has already proven itself and is now a safe investment. Thanks to technological advances, this system can now be integrated into drones and is no longer reserved only for aircraft. This technology is now used around the world for all activities that require precision and reliability.



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WORKFLOW COMPARISON

Terms

GCP – Ground Control Point
PC – Point cloud
PC Vis – Point cloud visualization
PPK – Post Processing Kinematic

Time

Conventional Workflow

🕒 3 Weeks

Order → Local Measurements by hand → Drawing Created by Hand

Photogrammetry Workflow

🕒 5 Days

Order → Set up GCP → Fly → PC compiling → GCP referencing → Improvement → PC Vis

3 – 10X Increase
All Digital

LiDAR Workflow

🕒 2 Days

Order → FLY → PPK → PC compiling → PC Vis

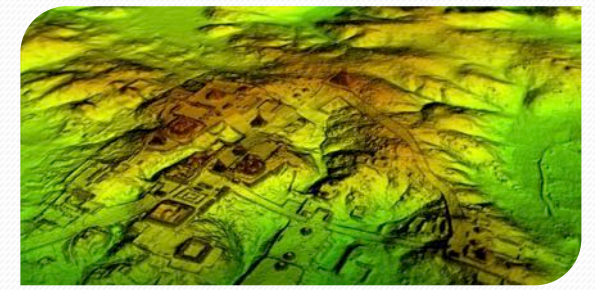
↑
RTK
setup

Up to 30X Increase
Can be visualised on the field

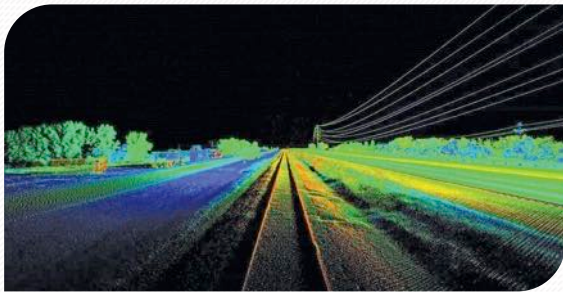
Examples of applications



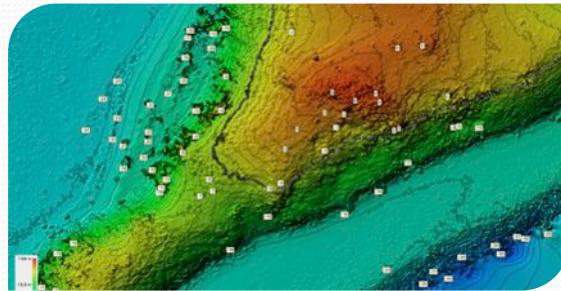
Construction /
civil engineering



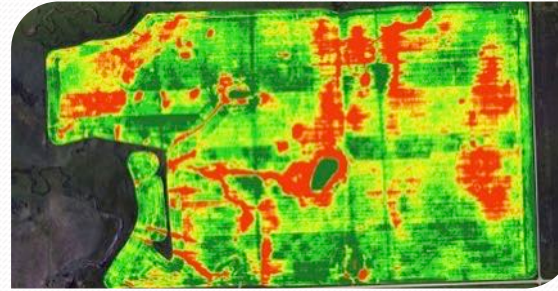
Archaeology / Monument



Rail Inspection



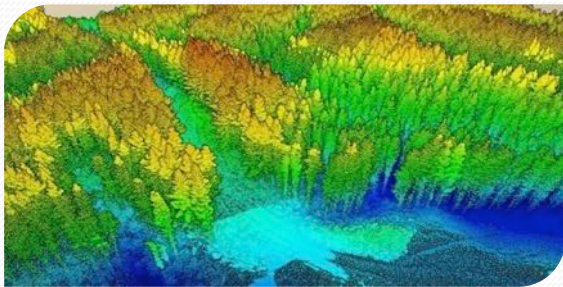
Land Survey for Real Estate



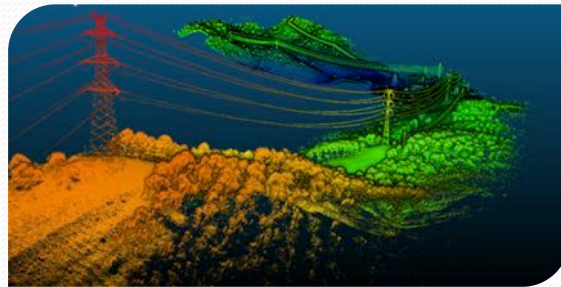
Agriculture



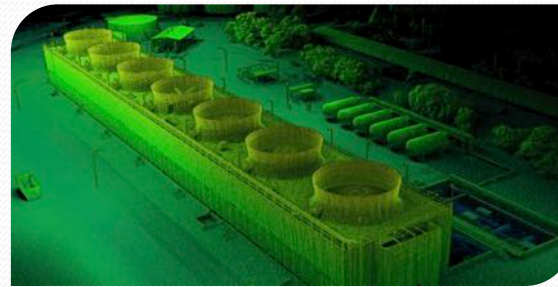
Mining



Forest Management



Corridor Survey



Oil and Gas, Power plant survey



Solar Panel Inspection

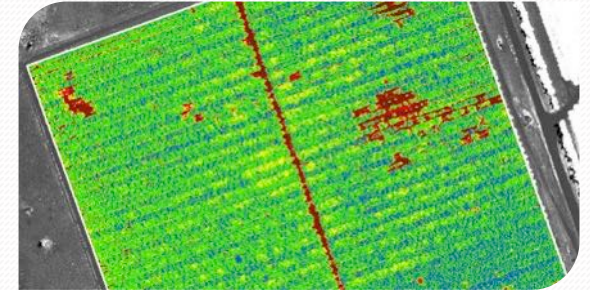
Examples of outputs



Orthomosaic Plan



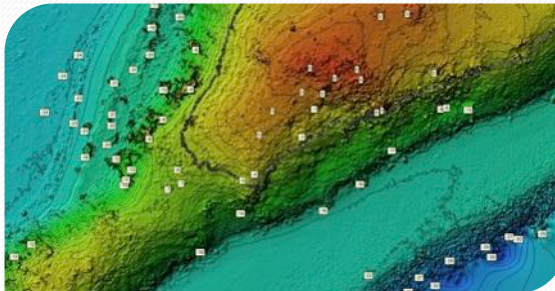
Contours Lines



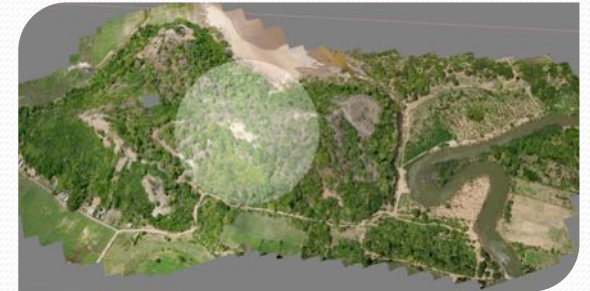
Index Map



Point Cloud



Digital Terrain
DEM, DSM, DTM



3D Model

SURVEY, INSPECTION, MONITORING

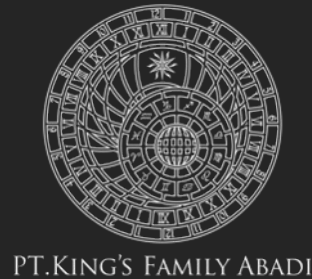
- THIS SERVICE ALLOWS YOU TO INSPECT YOUR ASSETS
- MONITORING & INSPECTION : BUILDINGS, BRIDGES, FACTORIES, OIL AND GAS
- DIVERSE PROJECTS AND CLIENTS (HARBOR, INDUSTRY...)



OUR CLIENTS

We have had the distinct honor of working with more than **322 different clients**. They have spanned the entire range of demographics including private, industrial, and government.

Here are some of our clients, just to mention a few :



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