



MSDI

COMPANY PROFILE 2023

High-end Mapping Drone Services
Lidar & Photogrammetry



PAGE OF CONTENTS

03 • Introduction

04 • About us

07 • Why choosing us

08 • What we do

10 • Our Services

11 • Photogrammetry

12 • LiDAR services

15 • Workflow comparison

16 • Example of application

17 • Example of outputs

18 • Assets Inspection

19 • Our clients

20 • Gallery

19 • Contact

COMPANY PROFILE

2023



OUR GLOBAL SERVICES

"we work without borders"

MSDI is providing Drone services throughout Indonesia. No matter which island your project is located on, 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.



MSDI

msdi.co.id

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, 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 level of quality achieved

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 a benchmark for our service to comply with the high-end film industry needs.

September, 2019 Creation of MSDI

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

December, 2019 1st LiDAR Sensor

As we neared the end of December, we achieved a significant milestone in our journey - the acquisition of our first lidar sensor, the Yellowscan VX15, equipped with the highly respected Riegl MiniVux1-UAV. This prestigious acquisition places us among an exclusive group of just 15 companies worldwide who possess this advanced equipment, a fact that fills us with immense pride.

August, 2022 VTOL Trinity F90+

To provide ever more efficient services and meet our customers' needs even more quickly, we have invested in VTOL technology with the Quantum Trinity F90+. This drone will enable us to achieve higher yields per flight and reduce the time spent in the field.

January, 2023 Yellowscan Voyager

Pushing our productivity to the maximum and always providing better data is becoming our obsession. We are therefore proud to **be one of the four companies in the world** to own this jewel of technology: the Yellowscan Voyager VUX120.



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.

MSDI

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

BEHIND THE COMPANY

REGIONAL



Iqbal Goval

Regional Marketing Manager

Customer Relationship



Christian Theodorus

UAV Operator

Certified Pilot



Agus Wira

UAV Operator

Certified Pilot

Why choose 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, drone 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)



Licensed pilots

In our business, 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.



Certified professional equipment

All the equipment we use is professional grade and certified for the services provided. Our equipment has regularly updated calibration certificates.



Engineering

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

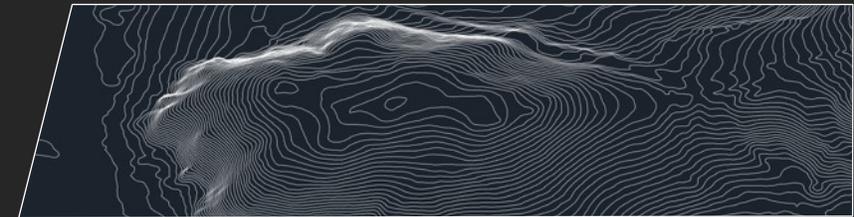
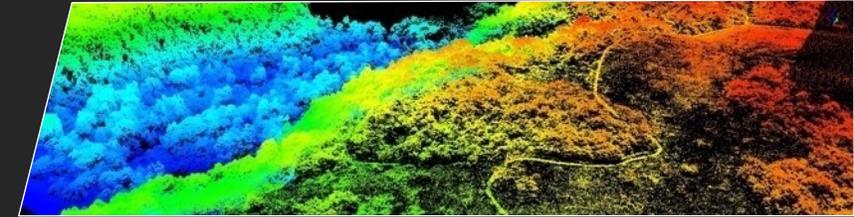


MSDI

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 modeling, 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 1500 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 0,5cm
- 15 echos capabilities – Vegetation penetration

MSDI

- 
- 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 begins with capturing a series of aerial photographs of land or objects using our advanced drones. These images are then intricately stitched together through the use of sophisticated algorithms to create a comprehensive 3D volume or map. The resulting data is extremely versatile and can be transformed into various formats to serve the needs of diverse professionals, including architects, surveyors, analysts, and engineers, providing them with valuable insights for their specific tasks.

LARGE Scale Mapping
VTOL UAVs enable us to carry out large-scale missions in a very short time and over any terrain, even with restricted take-off and landing areas. We're able to **cover more than 700 hectares in a single 60-minute flight.**

Sectors



Construction



Land
Surveying



Real Estate



Agriculture



Energies



Mining

LIDAR : THE HIGH-END OF MAPPING



Yellowscan VX15
Riegl Minivux-UAV1



Yellowscan Voyager
Riegl VUX120



High Precision
0,5cm



See through the
Vegetation - 15 echos



Available for different
activities



Most advanced
technology



Live streaming
on field



Multi-Platform
FixedWing - Multi rotors -
Manned aircraft

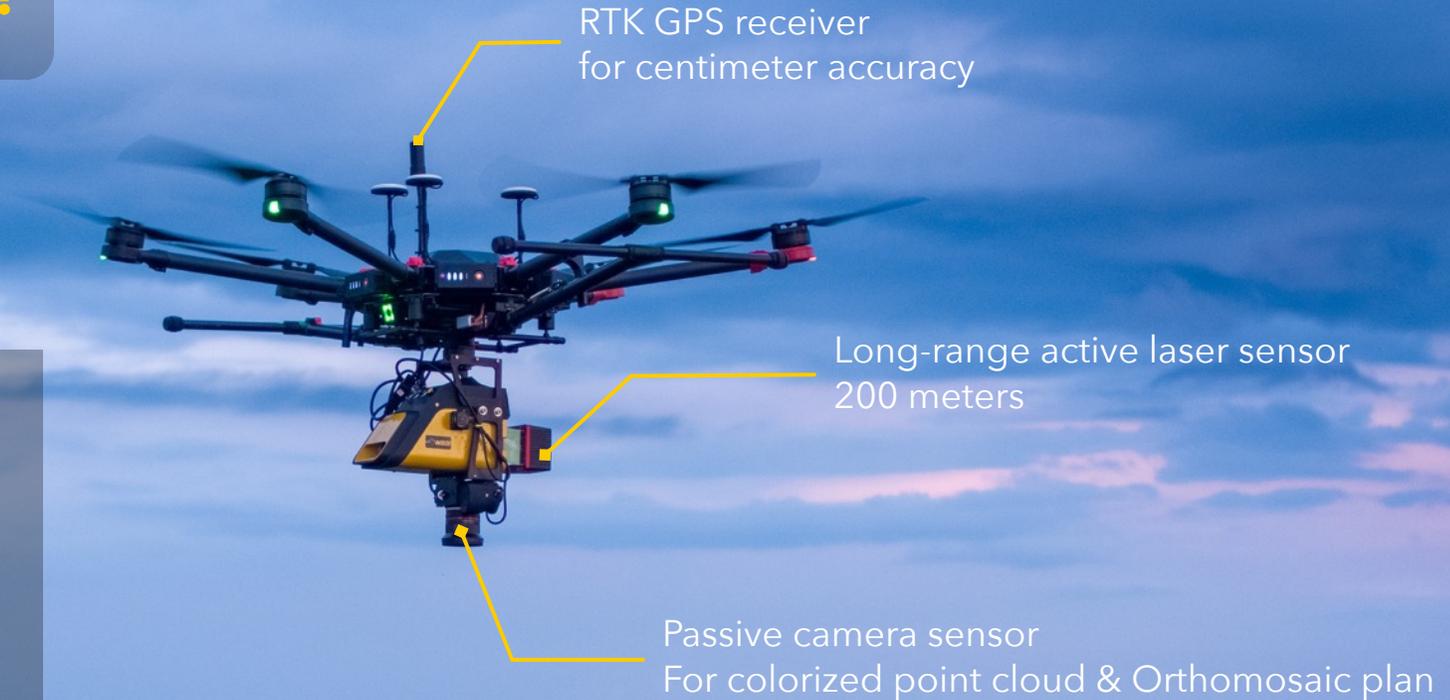


MSDI

msdi.co.id

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.



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 15 layers (echo) of foliage. We employ state-of-the-art technology and the laser is a certified 5 echo target.



Centimeter level precision

One of the biggest benefits of LiDAR technology is the accuracy and precision. Our laser has an accuracy of 1,5cm and a precision of 0,5cm, allowing us to measure an object to the nearest centimetre and to position it to within 5cm compared to the real world.



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



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.



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.



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.



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.



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.



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.



WORKFLOW COMPARISON

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

Time

Conventional Workflow

🕒 3 Weeks



Photogrammetry Workflow

🕒 5 Days

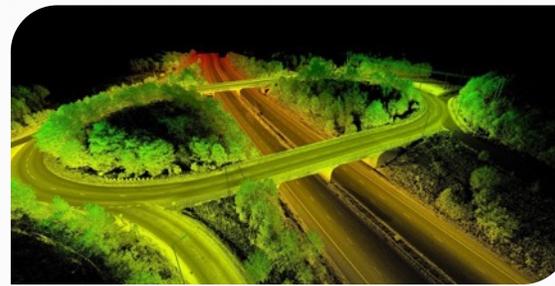


LiDAR Workflow

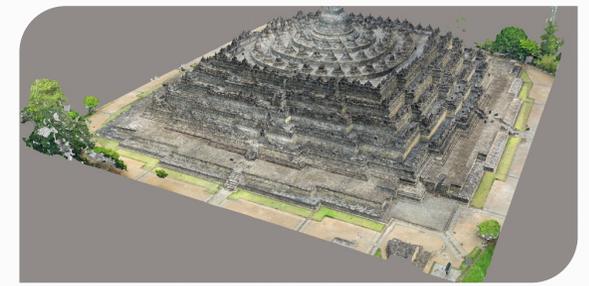
🕒 2 Days



Examples of applications



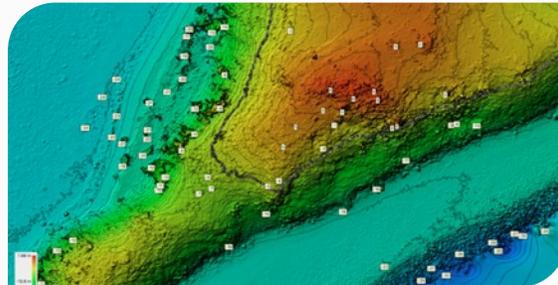
Construction /
civil engineering



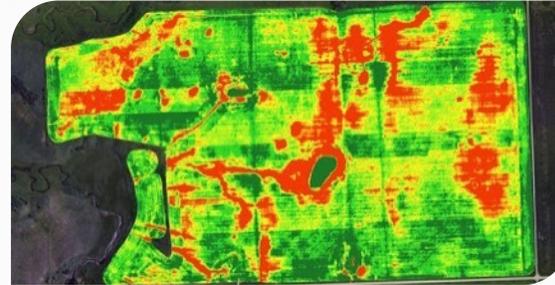
Archaeology / Monument



Rail Inspection



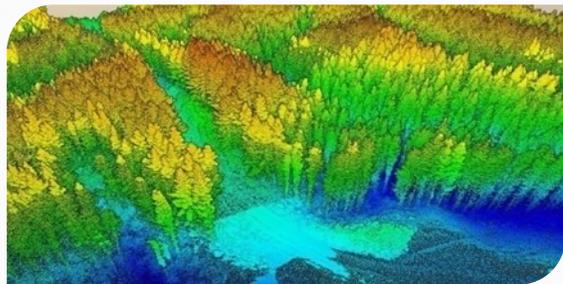
Land Survey for Real Estate



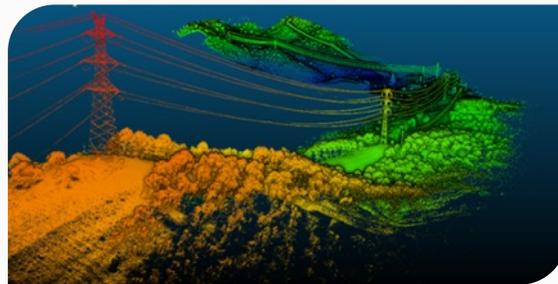
Agriculture



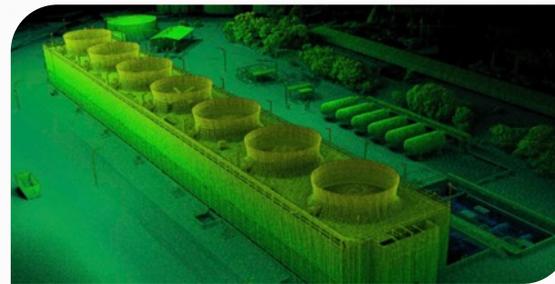
Mining



Forest Management



Corridor Survey



Oil and Gas, Power plant survey



Solar Panel Inspection

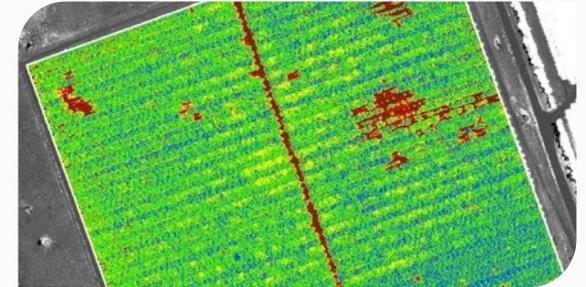
Examples of outputs



Orthomosaic Plan



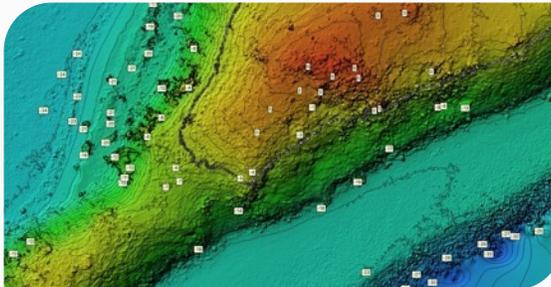
Contours Lines



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 **350 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 :



GALLERY



CONTACT US



ARNAUD DENISOT
PT.BALI DRONE PRODUCTION
EMAIL: arnaud@msdi.co.id
HP: +62 813 3961 9265

ALLYCIA HERMAN
PT.BALI DRONE PRODUCTION
EMAIL: contact@msdi.co.id
HP: +62 838 4657 9455

 <https://www.msdi.co.id>



MSDI



A
BALI DRONE PRODUCTION'S
BRANCH