



# RYNO

THE MAPPING MAESTRO

# About

**RYNO UAV** is our micro category survey-grade drone with an advanced mapping payload and state-of-the-art PPK Module. With our extensive experience in building MIL SPEC drones, we have ensured that RYNO UAV offers category-defying performance even in the most demanding conditions.

**0.6 Sq km**

**Area Coverage**  
with 80/60 overlap  
at 60 m AGL

**<10 cm**

**Absolute X, Y Accuracy**  
at 60 m AGL (with 95%  
confidence interval)

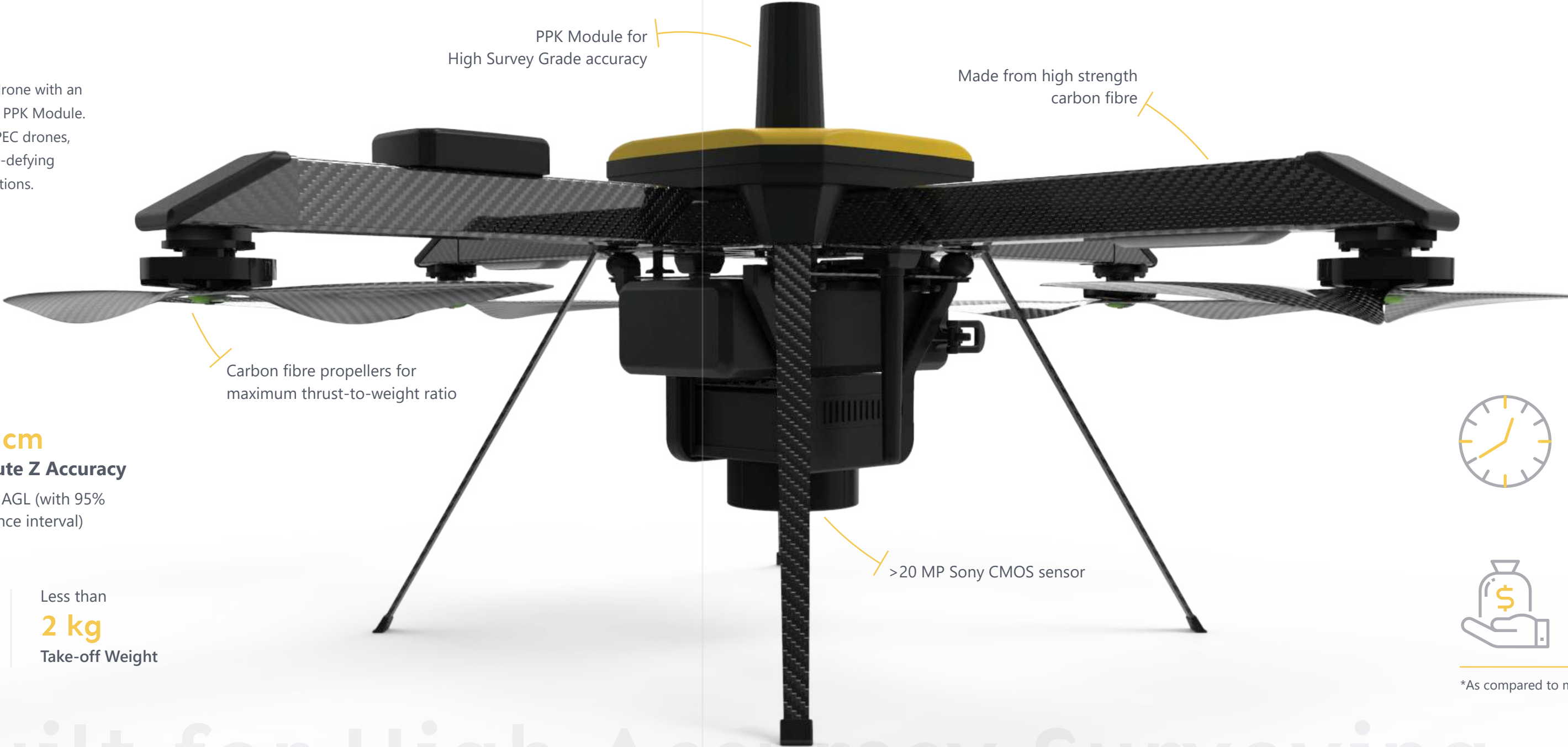
**<20 cm**

**Absolute Z Accuracy**  
at 60 m AGL (with 95%  
confidence interval)

Up to  
**4 km**  
Operational Range

More than  
**40 min**  
Flight Time

Less than  
**2 kg**  
Take-off Weight



Up to  
**80%**  
Reduction in Surveying  
& Mapping Time



Up to  
**60%**  
Reduction in Surveying  
& Mapping Costs

\*As compared to manual methods

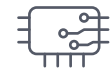
Built for High Accuracy Surveying

# Payload

The combination of mapping payload with PPK module is a powerhouse in itself. It delivers accuracy that has never been seen before in this class.



**>20** Megapixel Camera



**APS-C** CMOS Sony Sensor



**64GB** Storage (Expandable)

# Ground Control Station

Our state-of-the-art GCS enables fully autonomous flight and provides a host of safety and security features.

- ✓ Terrain Avoidance to keep your RYNO safe
- ✓ Easy Takeoff/Landing ensures you concentrate on outcomes
- ✓ Flight Planning for predictable and repeatable mapping operations
- ✓ Geotagging software for accurate post-processing
- ✓ Live Display of Flight Parameters to keep you updated every step of the way
- ✓ Encrypted Communication for highest privacy
- ✓ Fail Safe Features for Comm Loss, Low Battery, High Winds, Temperature range violation



## Tech Specs

India is a vast and diverse country. Frigid mountainous regions, hot deserts, humid plains, marine environment and wetlands with torrential rains, the country has regions that represent every weather pattern and terrain conditions. Proudly Made in

India, RYNO UAV has been built to withstand these demanding conditions and deliver stellar performance. In fact, it is first micro category drone in the world that has passed the stringent technical qualification criteria laid down by the Survey of India.

## Aerial Vehicle (AV) Characteristics

UAV Weight with battery and max. payload	<2 Kg
Range of live transmission (LOS)	4 km (un-obstructed & interference free)
Typical Cruise Speed	10 m/s
Functional Temperature Range	-10°C to +50°C
Dust & Drizzle Resistance	IP53 rated
Deployment Time	<10 minutes
Packaging and Storage	Backpacks to carry all mission critical components
Regulatory Compliance	NPNT Ready - applicable for Indian airspace

## Payload Characteristics

GNSS Grade	High accuracy L1 & L2 Frequency Band Enabled PPK
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## Mapping Performance at 60m AGL

Ground Sampling Distance (GSD)	<3 cm
Typical X, Y accuracy	<5 cm
Typical Z accuracy	<10 cm
Absolute X, Y accuracy	<10 cm (with 95% confidence interval)
Absolute Z accuracy	<20 cm (with 95% confidence interval)

### Ground Control Station (GCS) Software Features

Terrain Avoidance	Detects and avoids natural terrain by using elevation data (where available)
Geo Tagging	

### Communication link Characteristics

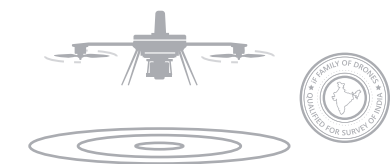
Autonomous Flight Termination System or Return Home (RH) option	Return home triggered by land command on various fail safe features
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## Failsafe Features

Multiple GPS on-board	For Redundancy
Auto-Return to Home and Land	On Communication Failure
Auto-Return to Home and Land	On Low Battery
Auto-Return to Home and Land	On exceeding Wind limit of the system
Auto-Return to Home and Land	On Battery Imbalance
Auto-Return to Home and Land	On exceeding Temperature limit of the system

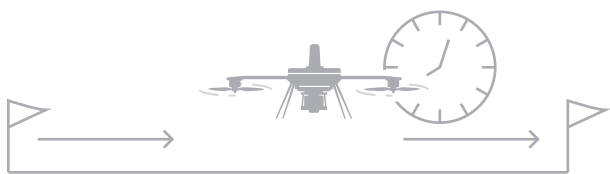
Warranty - 12 months or 500 flights whichever is earlier.

# Features



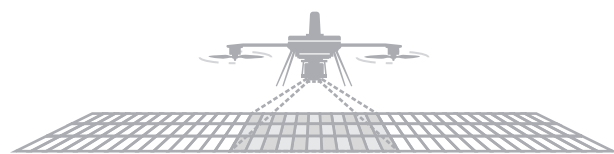
### SOI Qualified

iF Family of Survey Grade Mapping Drones are Qualified by Survey of India for Swamitva Yojna



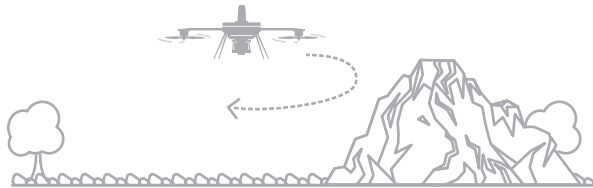
### Best-in-Class Area Coverage

Fly **longer** and **farther** for quicker ROI



### Superior Accuracy

**<5 cm in X & Y - axis** and **<10 cm in Z - axis Typical accuracy** with survey grade PPK Module



### Terrain Avoidance

**Safely conduct surveying operations** in tough weather and terrain conditions



### Robust Build Quality

RYNO airframe is built for over **2000 mapping operations**



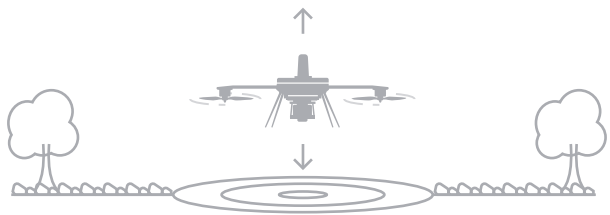
### Compliant With Air Travel

With the rating less than 100 watt hrs, Ryno battery can be hand carried in flight for easy transportation



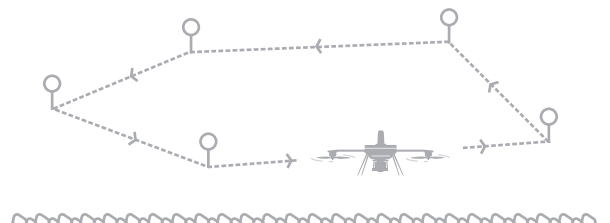
### Man-portable

**75% Lighter** than Drones with Similar Performance



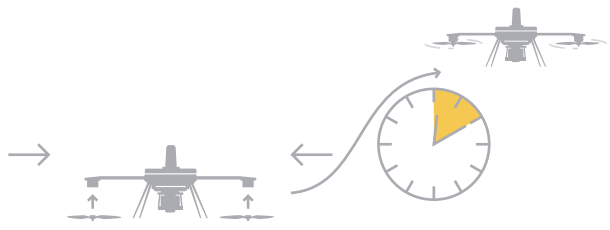
### Quadcopter Configuration with VTOL

Conduct operations with **increased flexibility**, even **from smaller areas**



### Waypoint Based Navigation

Tell Ryno where to go and let it take care of the rest



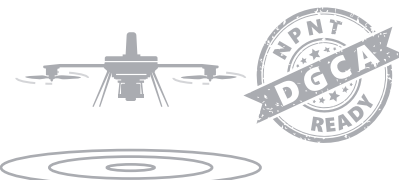
### Less than 10 minutes Deployment Time

User-friendly assembly to conduct mapping operations faster



### Minimal Training Requirements

**No UAOP, Security Clearance or DGCA Training** required\*  
*\*applicable in India only | under 60m AGL*



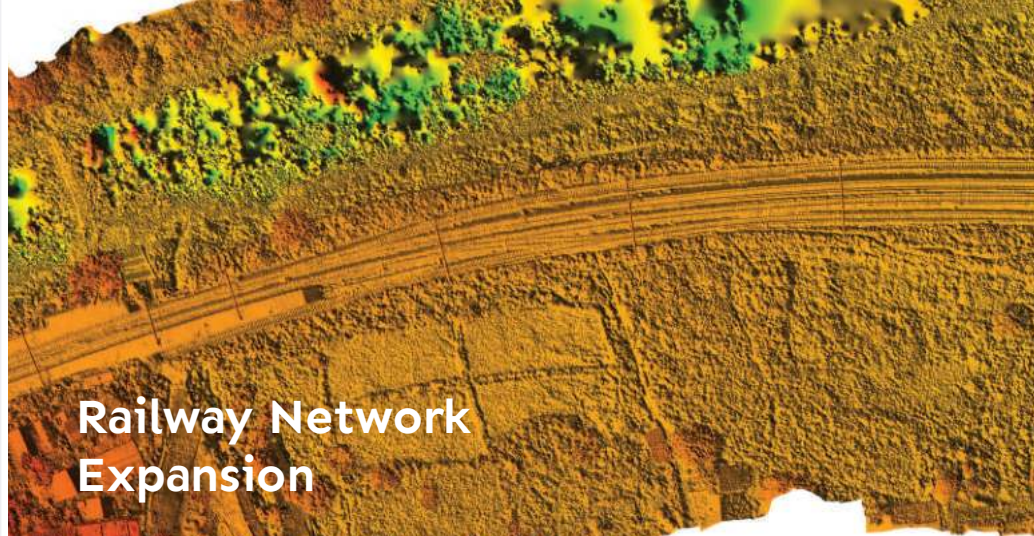
### NPNT Ready

Designed for NPNT standard



# Applications

With its industry-leading hardware and micro category weight, RYNO UAV delivers unbeatable area coverage with centimeter level accuracy, no matter your experience level





# Industry Use Cases

With RYNO UAV, you are guaranteed to get unbeatable area coverage and centimeter-level accuracies in real-world conditions even in the most demanding conditions. The UAV is geared to build operational excellence across a wide range of use cases in multiple industries.

Boost Operations

## Mining

- ✓ Pre Mining Survey
- ✓ Maintain Land Records
- ✓ 2D/3D models of mines
- ✓ Haul road planning
- ✓ Volumetric Estimations
- ✓ Calculate Slopes & Contours
- ✓ Determine changes before and after blast
- ✓ Tailing Dam Management

## Forest

- ✓ Mapping Forests
- ✓ Sustainable forest planning management
- ✓ Assessing Area under forest plantations
- ✓ Loss estimation after manmade / natural disaster
- ✓ Mapping canopy gaps

## Mapping & Survey

- ✓ Land management, surveying and planning
- ✓ Urban Planning
- ✓ Precise Area Measurements
- ✓ Ortho/ DTM/ DEM / 3D model / Contour map / Point cloud data

## Construction & Industrial

- ✓ 3D model of the site
- ✓ Construction progress monitoring
- ✓ Volume measurements
- ✓ Monitor Land changes

## Construction & Industrial

- ✓ Pipeline laying projects
- ✓ Asset digitization for facility upgrade / expansion
- ✓ Change and threat detection around pipeline and ROU
- ✓ Environmental Surveys and optimize Civil Engineering efforts
- ✓ Facility and inventory management

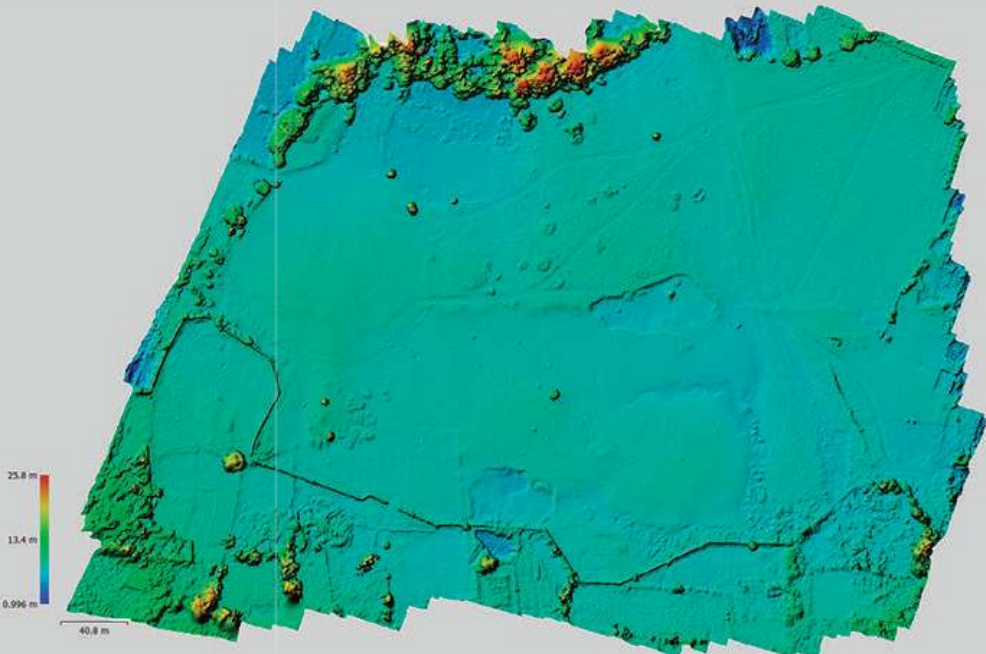


# Real-world Outputs

Our highly accurate and precise outputs are helping our customers across domains such as manufacturing, mining, oil & gas, railways, logistics, renewable energy and many more to build operational excellence

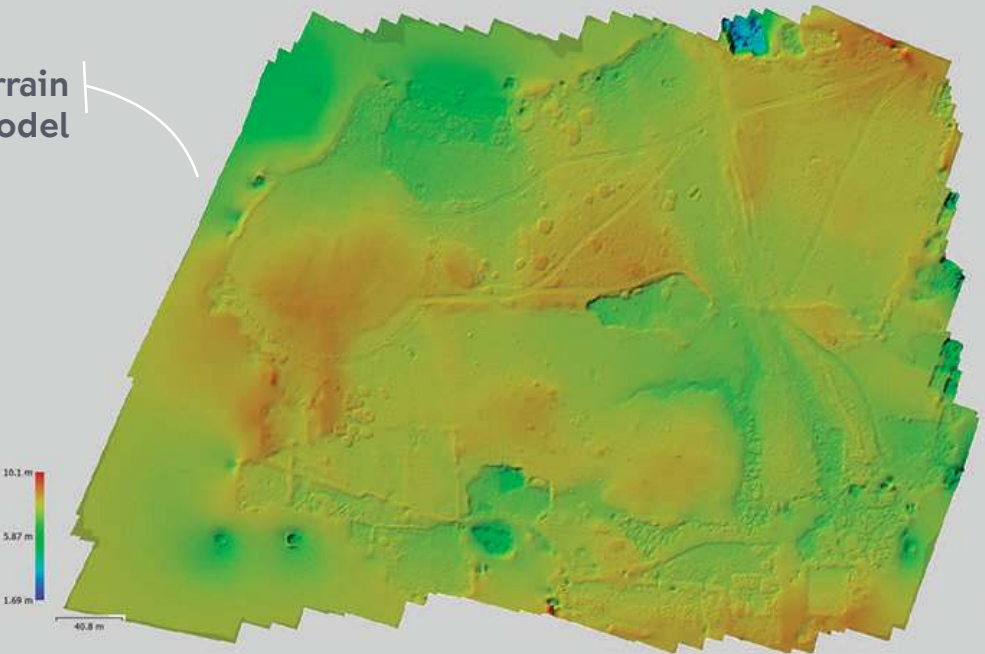


Orthomosaic Map



Digital Surface Model

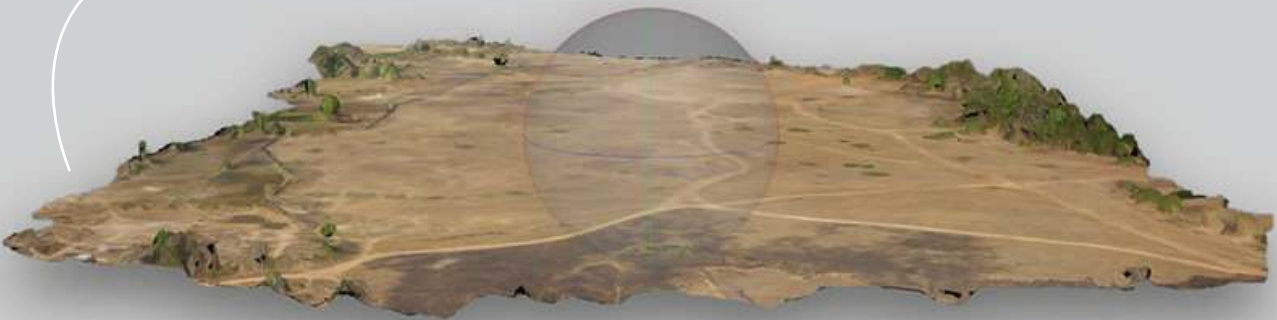
Digital Terrain Model



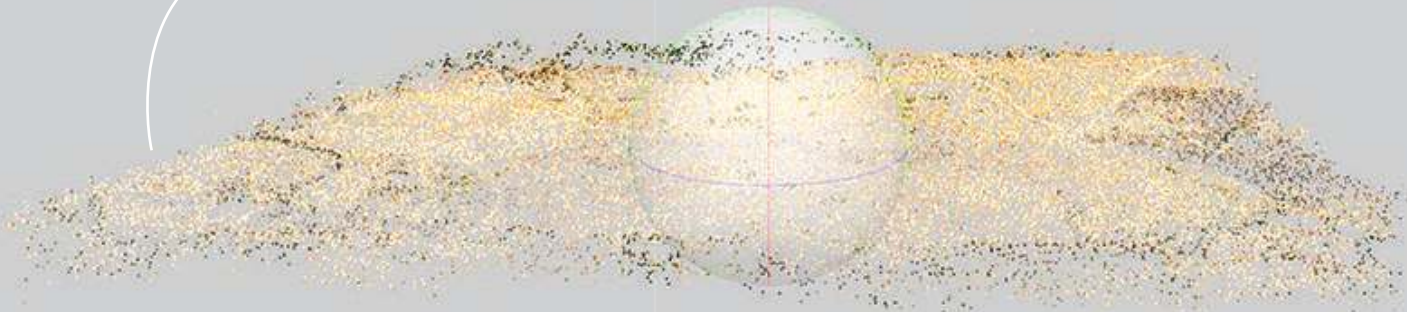
Contour Lines



3d Model



3d Point cloud



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