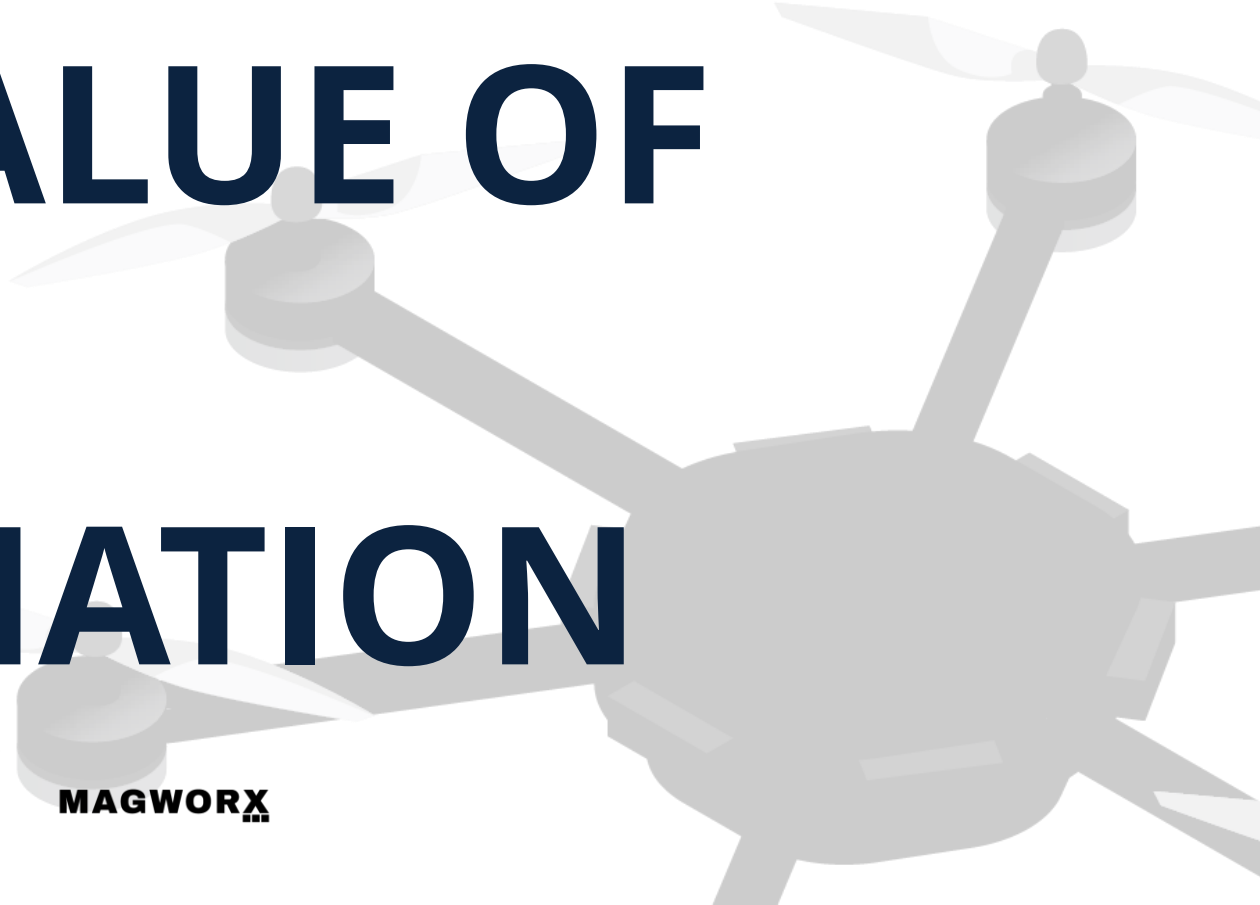
SCOUTAERIAL AFRICA

THE TRUE VALUE OF DIGITAL TRANSFORMATION



‘ YOUR VISION , OUR FOCUS ’

SCOUTAERIAL AFRICA

SCOUT GREEN

MAGWORX

WHAT HAPPENED?

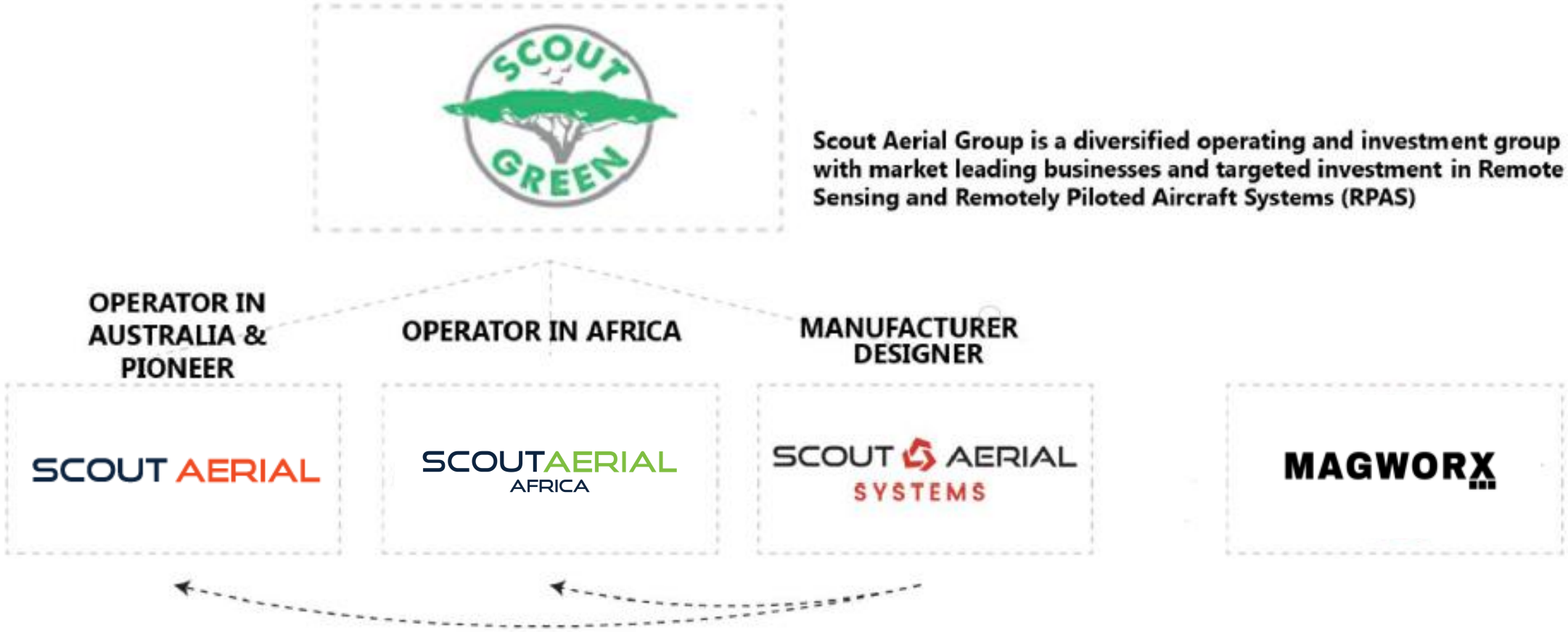
WHAT DID THE DOCTORS DO BEFORE SURGERY?

VALUABLE INSIGHTS!

BEFORE OPERATING:

- They could **assess** the current state of my injuries in detail (under the surface) without cutting me open (drilling/digging)
- They could **plan quickly** for the surgeries prior to going into theatre
- They could identify the **priority areas** to focus on first
- They were able to make **more confident decisions** on how to move forward effectively and efficiently!
- **This whole process is no different to innovative mining exploration…**

ABOUT SCOUT AERIAL



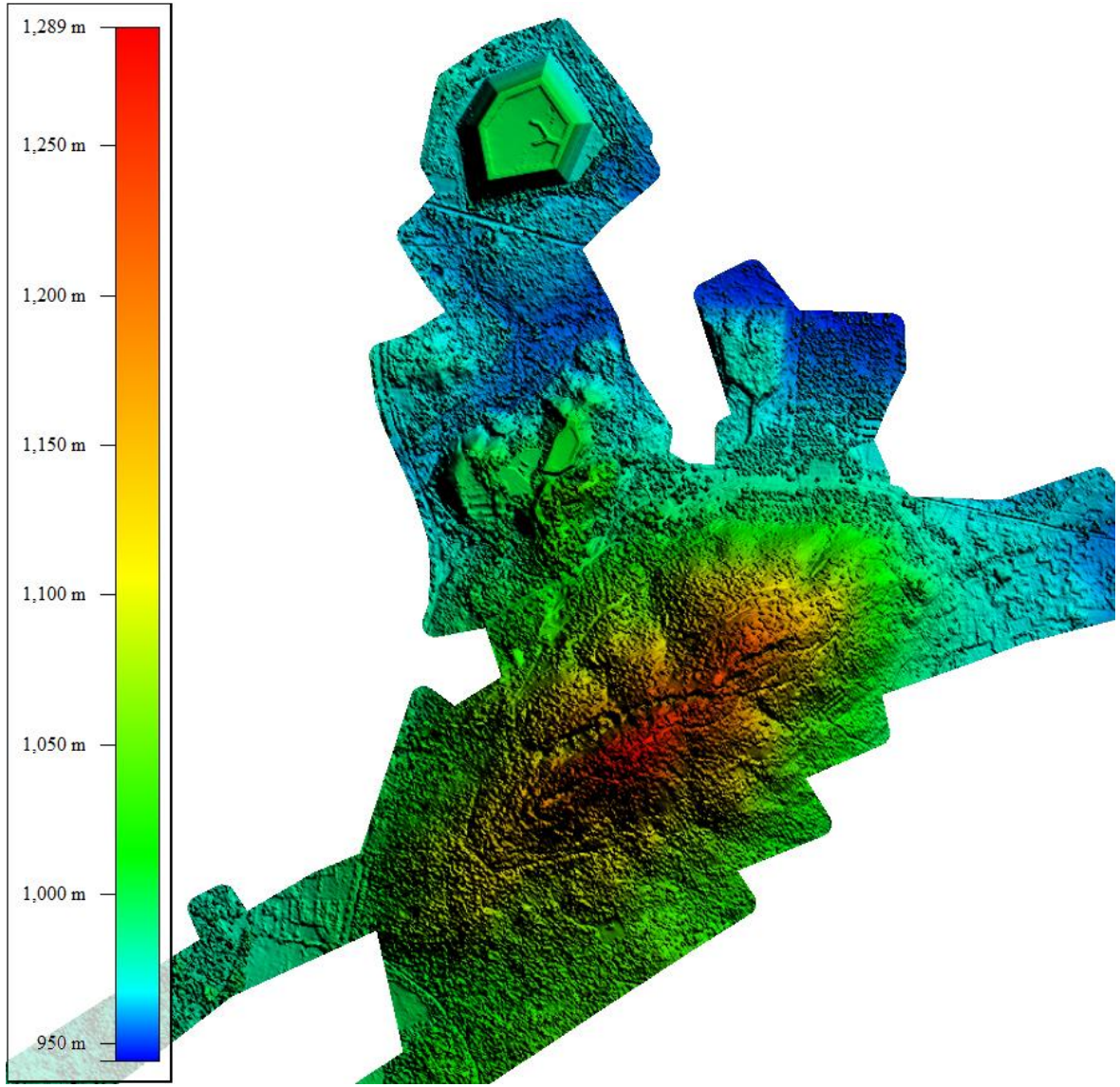
ABOUT SCOUT AERIAL

DATA - WHAT DO WE MEAN?

Orthomosaic

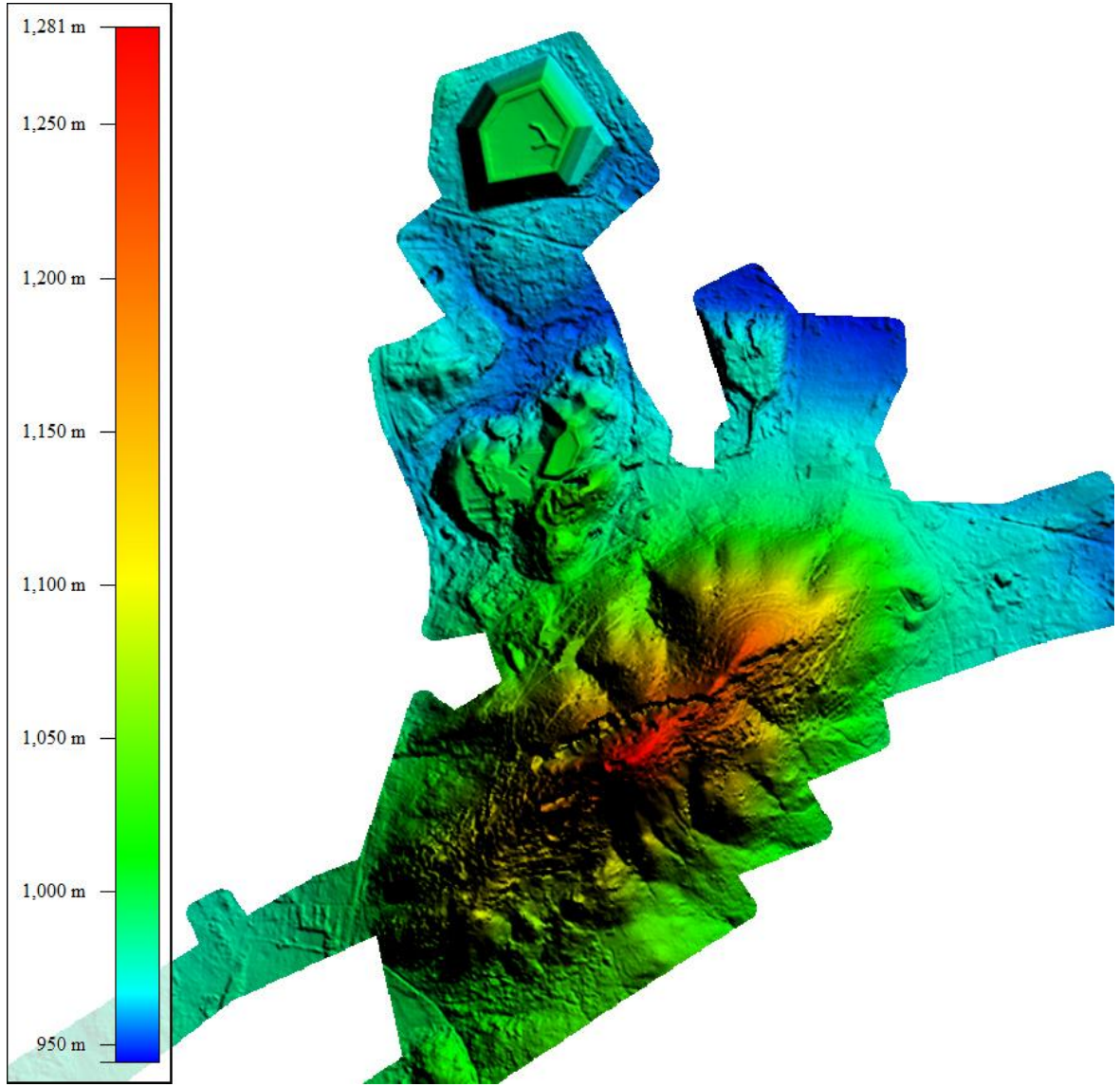
EXAMPLE DATA

Digital Surface Model (DSM)



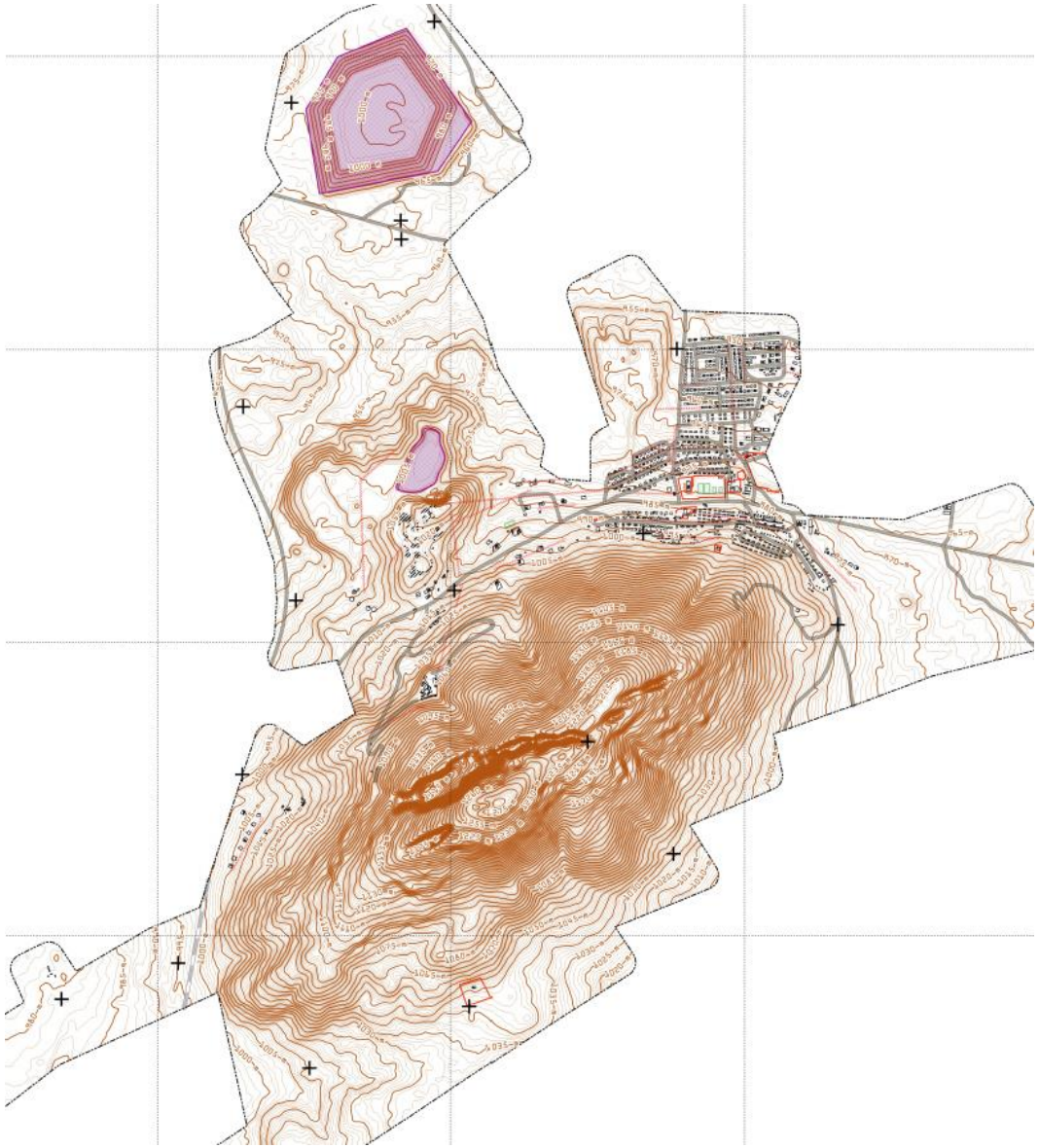
EXAMPLE DATA

Digital Terrain Model (DTM)



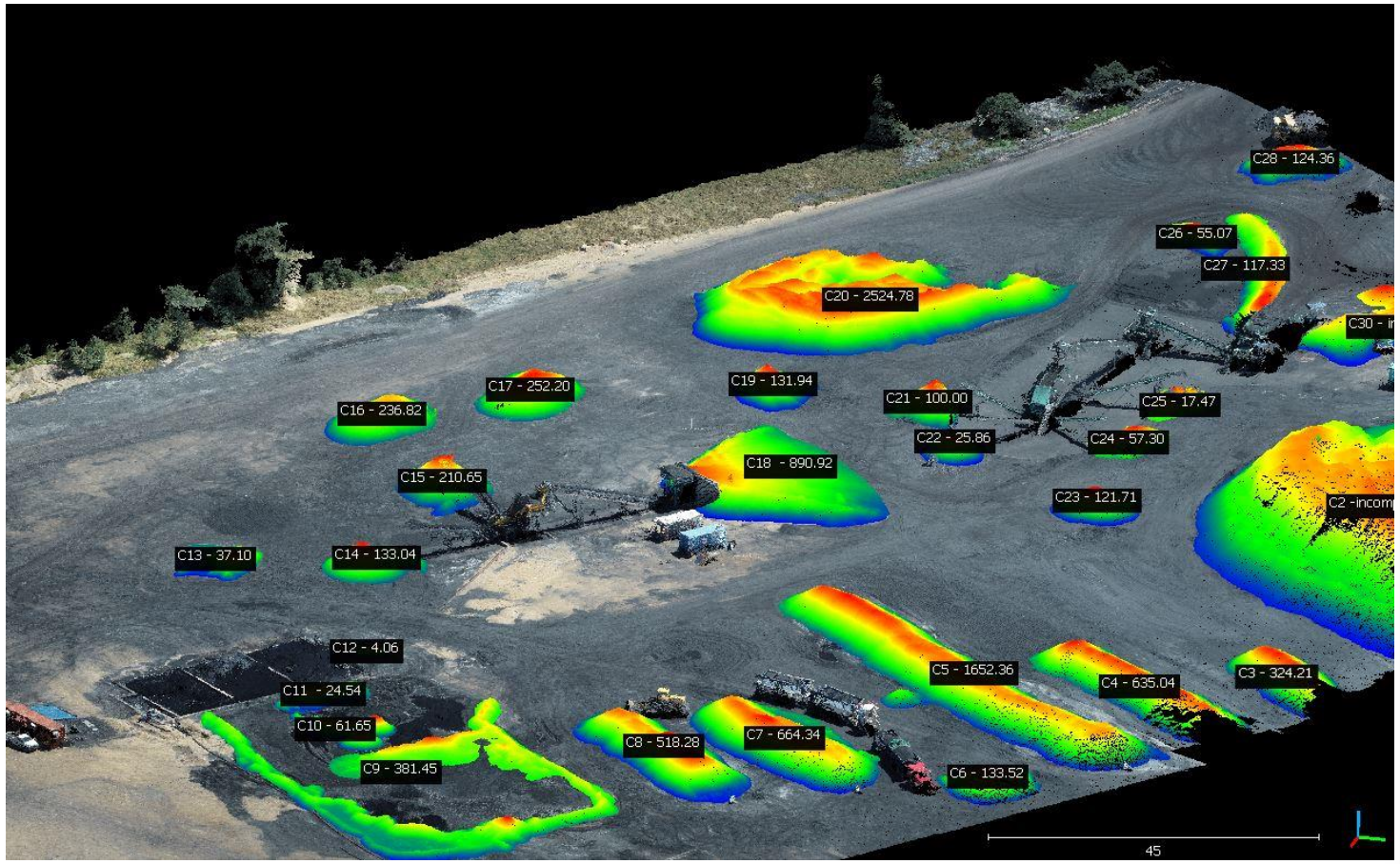
EXAMPLE DATA

TOPOGRAPHIC MAP



VOLUMETRIC SURVEYS

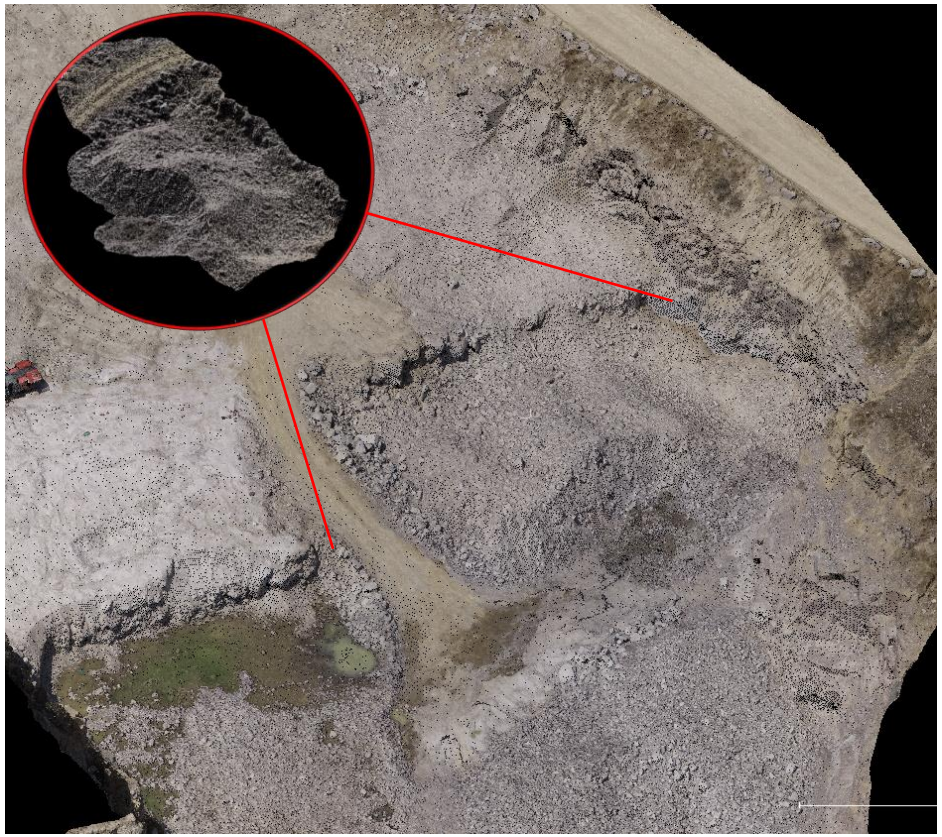
Stockpile Volume Calculations



VOLUMETRIC SURVEYS

Monitoring changes in pits: before & after blasting

Before blasting



After blasting

EXPLORATION

Exploration in Zimbabwe

- ~70% of the country has been mapped – leaving 16 million hectares largely unexplored
- Most of the 70% mapped was done using outdated methodologies and technologies
- Huge opportunities exist to re-examine existing areas and add more information to fill in the gaps that exist
- **We know that Zimbabwe remains largely under-explored with new technology!**
- An estimated 9 Tonnes of gold **(USD$675 MILLION**) per year is misappropriated due to illegal mining activity

MACHINE LEARNING FOR ILLEGAL MINING

Makorokoza Tracking

MAGNETIC EXPLORATION

Current vs New Data

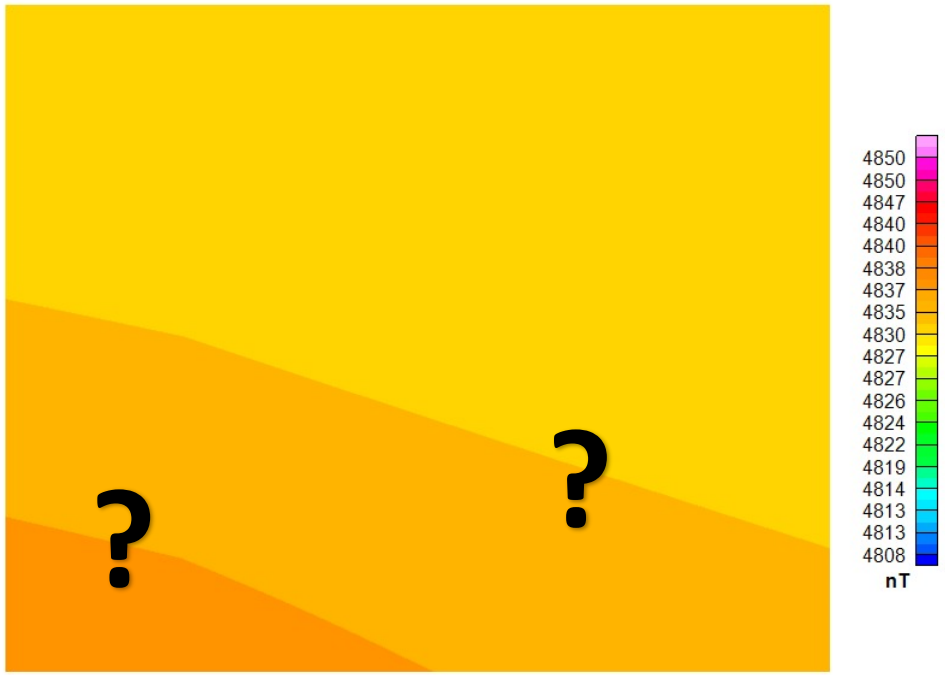
CURRENT (AERO-MAG)	NEW (DRONE-MAG)
▪ Height : 304m	▪ Height : 20m
▪ 1km line spacing	▪ Spacing as little as 10m (standard is 25-50m) = ***1,520 times more detailed*** ▪ Able to cover larger areas than surface mag without cutting lines

Drone Magnetics is the perfect solution between surface mag & traditional aero-mag

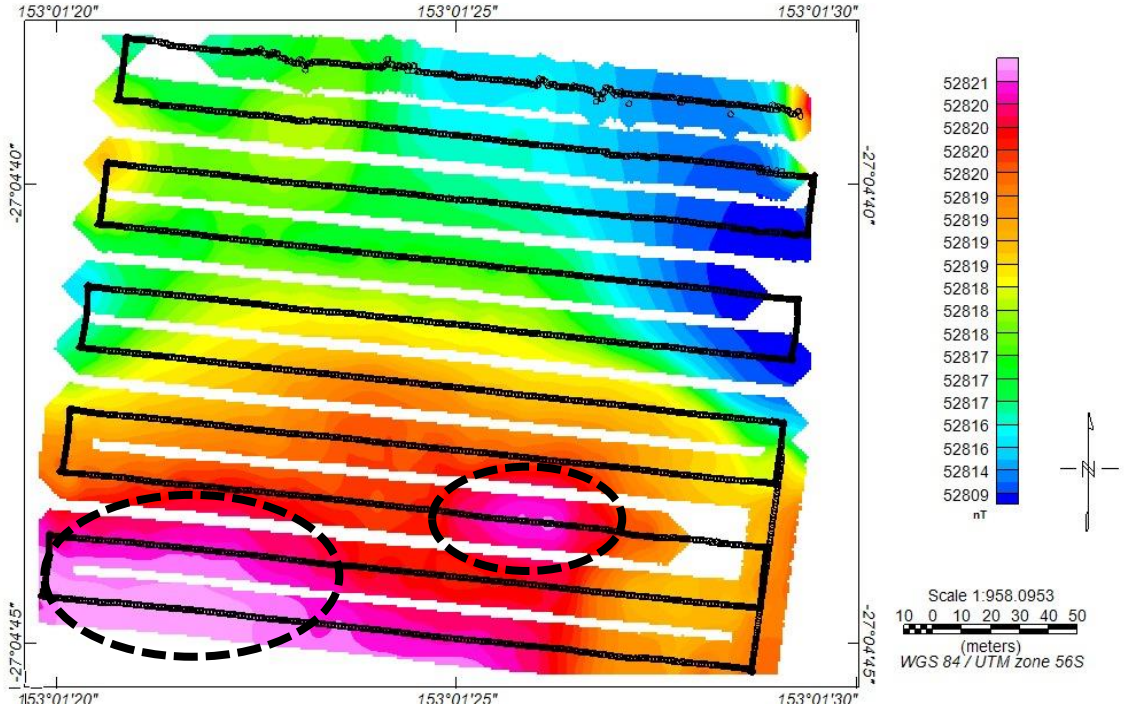
EXPLORATION

Current vs New Data

AERO-MAG

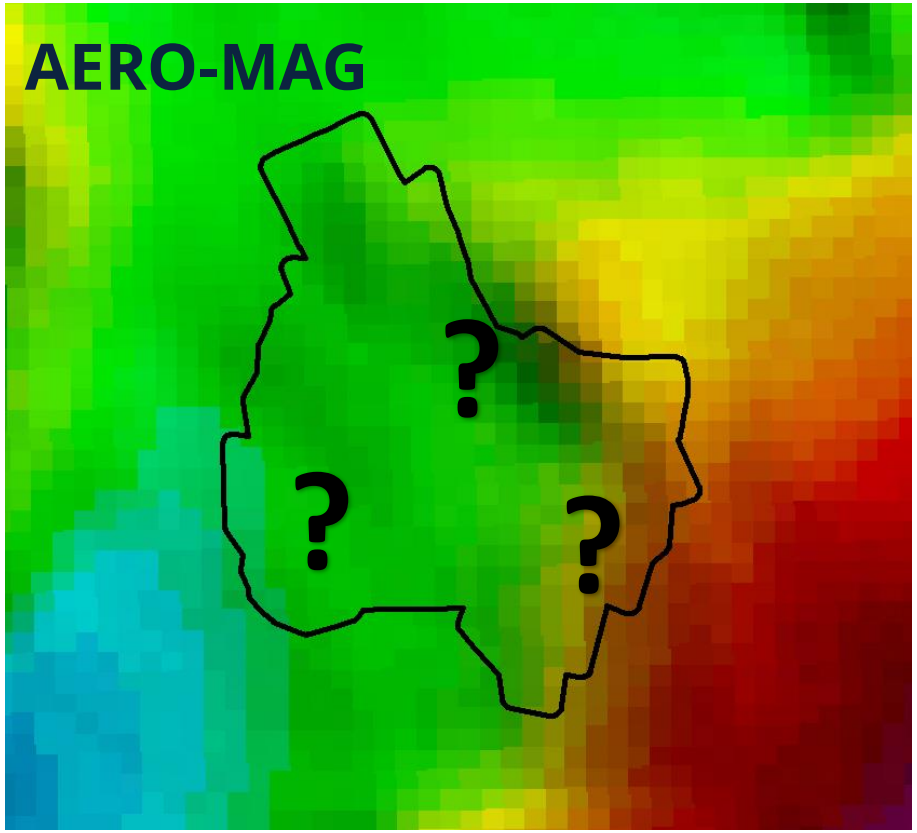


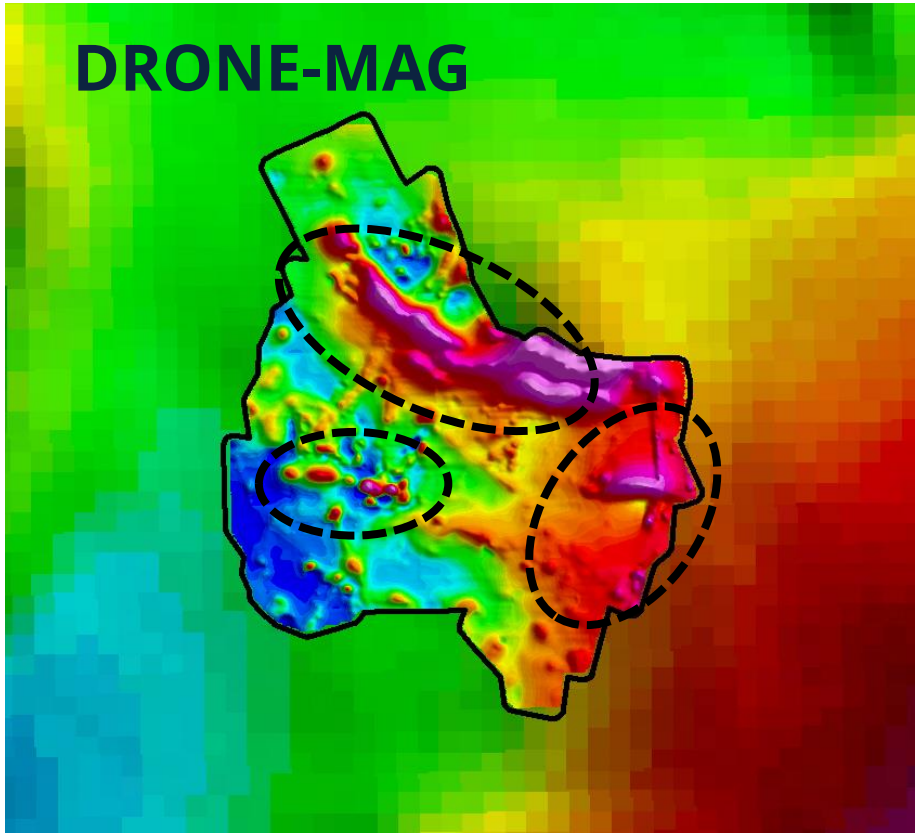
DRONE-MAG



EXPLORATION

Current vs New Data





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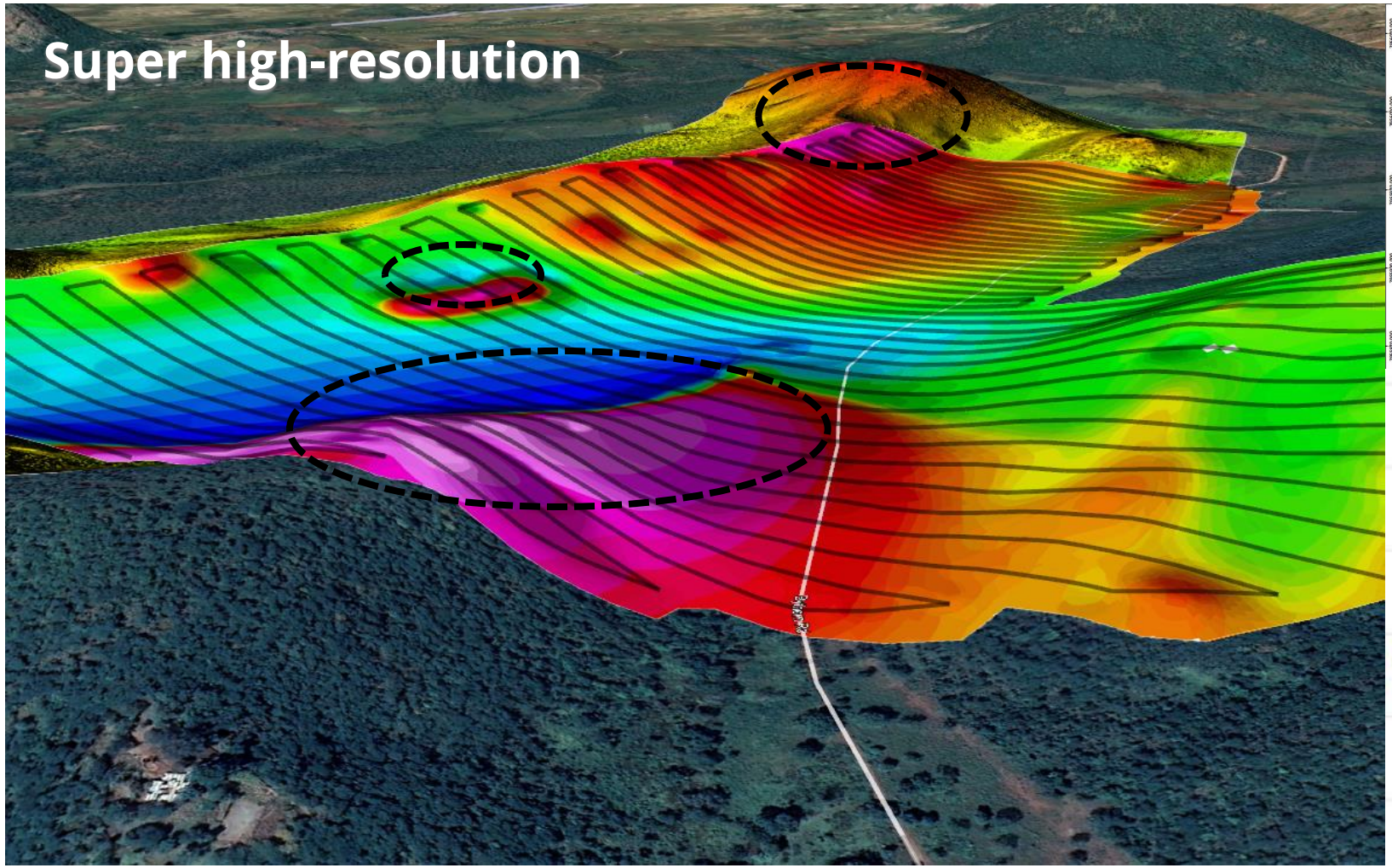

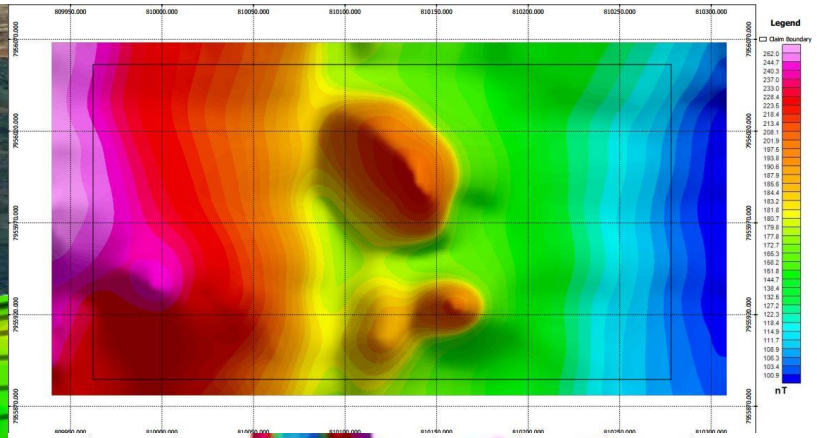

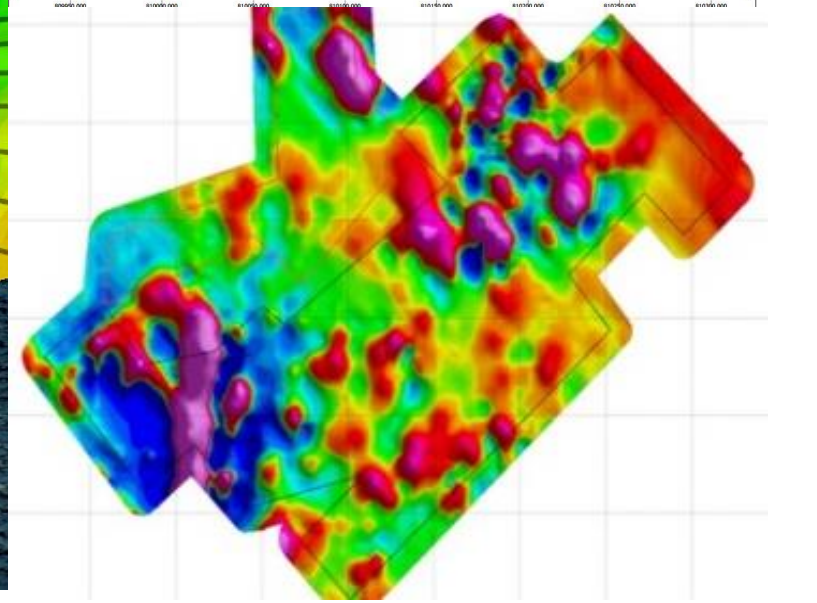

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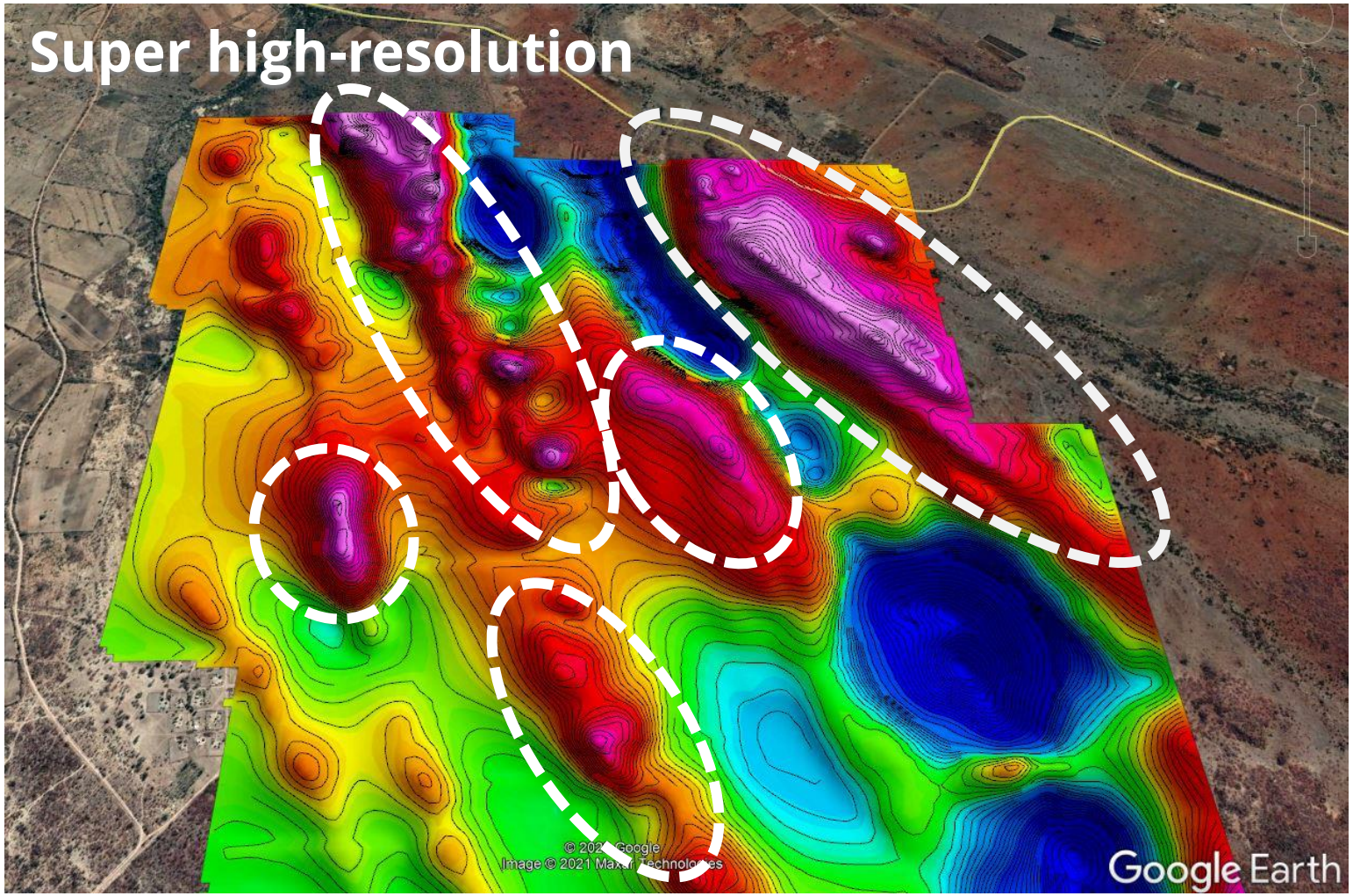
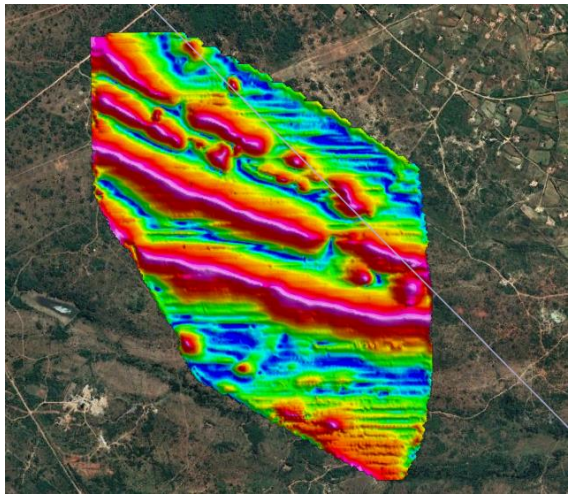
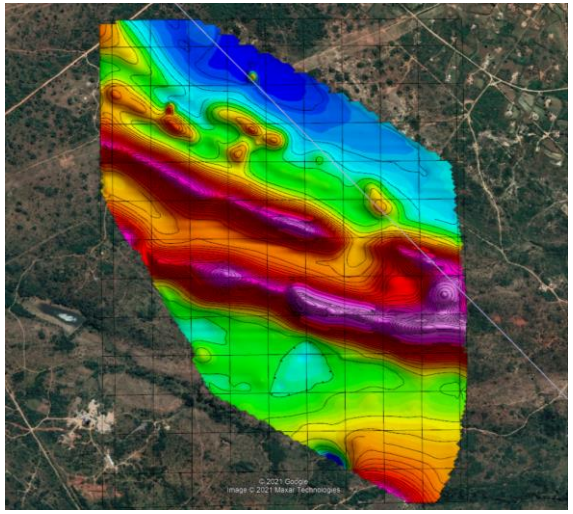






OUR PROCESS

1	**Planning and assessment of data**	All current data will be assessed, analysed and digitised. Priority target areas will be identified, a timeline drawn up and all the necessary ground and airborne planning conducted. This process will ensure that the most effective plan is created for the initial mapping and subsequent magnetic surveys.
2	**Ground Control Survey**	A detailed and essential ground control program needs to be established in order to ensure accuracy of the final deliverables. This stage involves a coordinated program with our survey team including all existing survey data available in the country. Once planned, the team will mobilse to the target areas and establish local control networks. This is essential for the collection of accurate, usable data.
3	**Flight Operations**	Once the planning and ground control operations are underway, the airborne team will plan, fly, collect and manage the required data. This involves detailed and coordinated efforts with the ground team, project team and support team.
4	**Data processing**	Data quality control and assurance checks are conducted immediately after flight operations. Once approved, the data is packaged for processing. Processing for this project is estimated to take 19,500 machine hours and is spread out across multiple workstations that process 24 hours a day. Results are checked, accuracy reports are generated and the output deliverables are made available.
5	**Deliverables and target identification for illegal mining**	Once the initial deliverables are available, the GIS team will identify and mark illegal mining activity baselines. This is essential for a monitoring program as it allows incremental change detection to be conducted. Reports can be provided in multiple formats, but we would suggest the baseline program identifies number and geolocation of unapproved disturbances.

OUR PROCESS

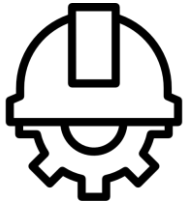
6	**Geodatabase setup and digitising of data**	GeoDatabase and web portals for the program will be established during the planning stage. Once the data processing is complete, it will be run through a custom pipeline to be made available to approved users. This stage will encompass training for local MoM personnel and the setup of MoM IT infrastructure. Data will continue to be digitised and added to the database.
7	**Magnetic Survey Operations**	Once the initial mapping has been conducted (broad area at 100m line spacing), the data outputs will be used to identify and target priority magnetic survey locations. The geophysics team will be mobilised to capture magnetic data across broad areas.
8	**Magnetic Data processing and interpretation**	Once the magnetic data has been collected, our proprietary magnetic data processing is conducted to interpret the data and produce valuable information for the reports. This allows the development of specific and direct drilling and sampling programs to be initiated. Saving millions of dollars on expensive 'best guess' drilling programs also means the whole cycle is completed in a fraction of the time of traditional methods.
9	**Data overlays and block packaging**	Once completed, blocks of data will be provided and built into the database, ready for access, quantification and management.

MACHINE LEARNING FOR AUTOMATED DETECTION

HOW TO REALISE THE VALUE OF DATA

TIME

MONEY



SAFETY

ACCURACY

INSIGHTS

BENEFITS

1. Digitised database of all mining data
2. Updated, high-resolution topographic data (data renewal)
3. Local Digital Management Centre
4. High Priority Target Zone identification
5. Illegal mining management
6. New skills and technology transfer for local personnel
7. Environmental audit and management
8. Ability to sell/manage resources virtually
9. Drive revenue increases / attract investment

IMPORTANT FACTORS TO CONSIDER

1) First approved operator in Zimbabwe
2) Liability cover and insurance
3) Inaccuracy can lead to much higher expenses
4) In a world of big data, it's very important to manage it correctly
5) Efficiency and effectiveness – must be better than current options
6) Data integration is very important

REMOTELY PILOTED AIRCRAFT
OPERATOR CERTIFICATE

State of Operator: ZIMBABWE		
Issuing Authority: CIVIL AVIATION AUTHORITY OF ZIMBABWE		
Expiry Date: 05 September 2022	ROC No: 282/2	
Operator Main Base of Operation: Scout Aerial Africa 9B Ridgeway South, Highlands, Harare	Name of Certificate Holder: Scout Aerial Africa	Operator's Address: Scout Aerial Africa 9B Ridgeway South, Highlands, Harare Tel: (+263) 772 383 529 Email: Patrick Weeden <patrick@scoutaerial.com.au>

The above holder of this certificate has been authorised to conduct commercial aviation operations in accordance with:
*the provisions of the applicable Civil Aviation Regulations
* the attached Operations Specifications
* the approved Operations Manual

Effective Date: 06 September 2021	Signature	Name: P. HOVE
Issued at: HARARE ZIMBABWE	FOR: DIRECTOR GENERAL	

This certificate was issued without alteration or erasure

F 0339

‘ YOUR VISION , OUR FOCUS ’

THANK YOU

Patrick Weeden

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