OUR SOLUTIONS

- UAV Magnetic Survey
- UAV Radiometric Survey
- Photogrammetry and Orthophotography
- UAV Lidar
- UAV TDEM
- UAV Total Field Magnetometric Resistivity (TFMMR)
- Fixed-Wing Magnetic and Radiometric Survey
- Data Processing & Quality Control

AeroPhysX delivers leading-edge geophysical and geospatial solutions through manned and unmanned aerial technologies. We acquire, process, and interpret high-quality data to generate actionable insights for clients around the globe, with a strong foundation in the mining sector.

We leverage UAV innovation to drive precision, efficiency, and value in geophysical and geospatial data capture, positioning AeroPhysX as a global leader in UAV-based exploration and integrated geospatial solutions for mining and beyond.

With proven expertise in radiometric, magnetic, EM, and complementary survey methods, we deliver reliable data acquisition and advanced processing - a unique capability that empowers clients to make informed decisions, optimize operations, and maximize return on investment.

AeroPhysX

A NEW STANDARD IN EXPLORATION TECHNOLOGY

UAV-BASED TECHNOLOGY BROCHURE

GET IN TOUCH

Offices in Canada and South Africa
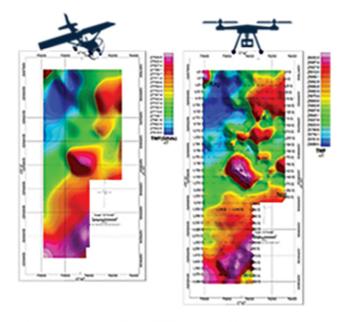Projects undertaken worldwide

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UAV MAGNETICS

By integrating advanced sensor technologies with our proprietary flight-path and terrain-following control software, we conduct high-resolution surveys with precise terrain tracking—even in rugged environments. The resulting data is of exceptional quality, adding new dimensions to exploration and unlocking greater value for geophysical discovery.

Below is actual data from the same area.

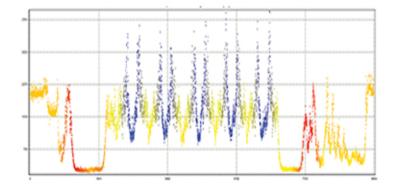## Advantages of the UAV-Magnetic system:

- ⊙ UAV surveys can be flown as low as 20m agl
- ⊙ Flying speed of approximately 30 - 40 km/hr
- ⊙ Accurate terrain-following due to software control and vertical climbing ability allow surveying of mountainous areas and valleys
- ⊙ Flexible base of operations
- ⊙ The platform is unmanned therefore any accident results in zero loss of life
- ⊙ Outstanding data quality due to low altitude, slow speed and high sampling.

UAV RADIOMETRICS

UAV radiometric surveying is transforming exploration by using specialized airborne sensors to quickly and cost-effectively assess potential resource-rich areas.

UAVs improve efficiency, reduce costs, and provide near real-time data for informed decision-making by delivering high-resolution imaging, multi-spectral analysis, and access to remote terrains. This capability has become a pivotal tool in modern exploration, particularly for the mining and oil & gas industries.
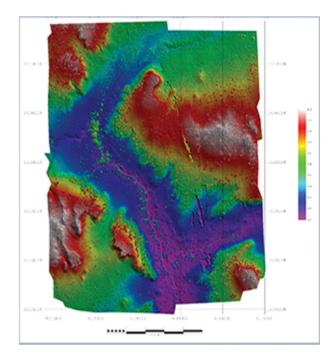

ORTHOPHOTO AND DEM

The production of high-resolution orthophotos and digital terrain models (DTMs) is a critical step in establishing a comprehensive baseline dataset for mining and exploration projects.

These datasets provide accurate terrain and elevation information, which is essential for precise terrain-following surveys, planning key infrastructure such as tailings dams, and optimizing the placement of operational facilities.

Beyond initial planning, this data supports reconnaissance of prospective areas, helping to reduce costs and risks associated with follow-up investigations. It also provides a valuable reference for long-term site management and future rehabilitation, ensuring that operational and environmental considerations are fully informed from the outset.
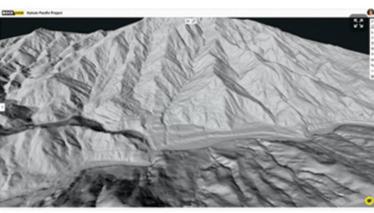
UAV LIDAR

UAV LiDAR (Light Detection and Ranging) technology allows for rapid, high-precision mapping of terrain and infrastructure, even in complex or inaccessible areas. By emitting laser pulses and measuring the time it takes for them to return, LiDAR captures detailed 3D information about the surface, vegetation, and built structures. This produces highly accurate point clouds that can be transformed into digital terrain models, digital surface models, and detailed 3D maps.

Our UAV LiDAR capability enables efficient data collection over rugged or remote terrain where traditional ground surveys may be difficult or costly. The technology is particularly valuable for mining, forestry, environmental monitoring, infrastructure planning, and disaster management, providing both high-resolution spatial information and actionable insights for decision-making.

With advanced processing workflows, we deliver clean, reliable, and georeferenced datasets that can be integrated directly into GIS or CAD platforms. This allows clients to model terrain, plan infrastructure, monitor changes over time, and reduce operational risk while improving project efficiency.
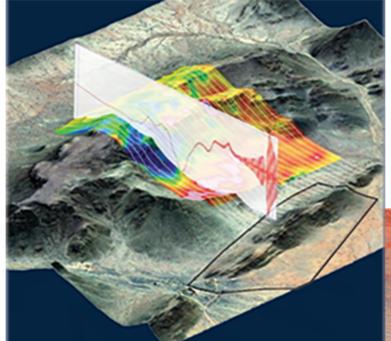

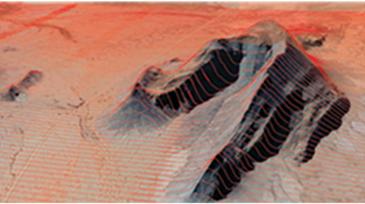Image courtesy of ROCK Robotic

UAV ELECTROMAGNETICS

DroneTDEM is our proprietary technique that simultaneously measures the Earth's slowly varying magnetic field and the fast-changing magnetic signature produced by induced subsurface currents. Every electrical current generates an associated magnetic field, and our system detects these subtle signals directly using a specially designed total field magnetometer.

Advances in magnetometer technology allow us to measure decays with unprecedented speed and precision. This capability enables us to map subsurface conductive features rapidly and accurately, providing valuable insights for mining, exploration, and environmental applications.

We are proud to have developed the world's first drone-based TDEM system, setting a new standard in airborne electromagnetic surveying.

SAFETY BUBBLE

We have developed a proprietary technique that creates a 3D bubble around the drone that detects obstacles in 360° angle. This technique enables us to undertake UAV surveys in terrain such as montains previously regarded to be hazardous for UAV flight while maintaining the integrity of the data.

CLIENT BENEFITS

We provide clients with faster, more accurate insights that optimize operations and maximize return on investment.

- Access to world first technology
- Clients able to make accurate decisions
- Client Return of Investment is increased
- Green (low) Risk rating for Safety & Risk assessments
- Clients efficiency enhanced