Our vision

We go beyond ordinary mapping; our goal is to make discoveries. This objective motivates and directs our technological engineering, signal processing methods development, data analysis, and interpretation. Our exploration techniques are not merely advanced; they're the pinnacle of sophistication, rigorously engineered to unveil new insights into geology and unlock the hidden potential of surveyed areas. In each survey, we are guided by a singular vision: to be more than a company that is just mapping but one that charts the course of discoveries, leaving an indelible mark on the territories' exploration history. Our clients' success in exploring their properties is our ultimate achievement metric.

Contact us

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EXPERT GEOPHYSICS

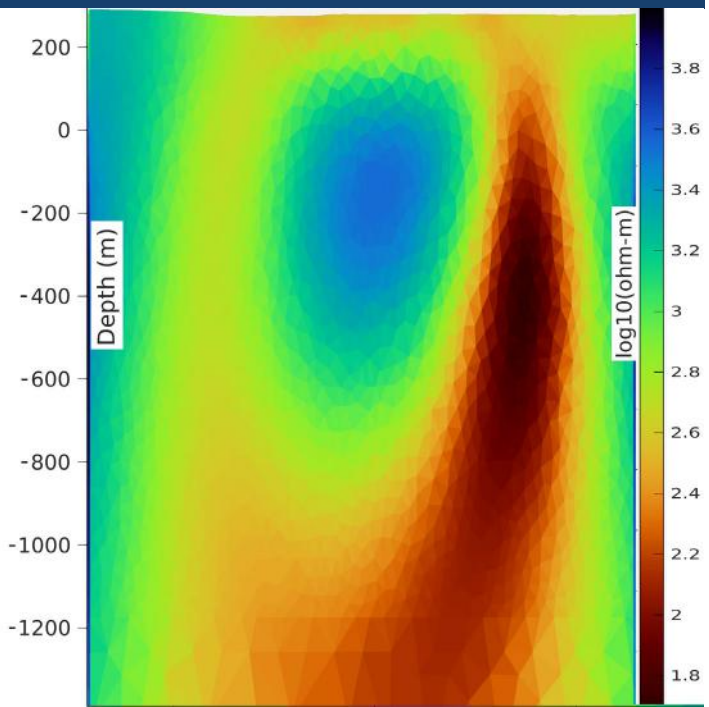
from innovations to discoveries

on the web

Our services

Expert Geophysics offers a comprehensive range of airborne geophysical services designed to meet the distinct needs of our clients worldwide.

We offer diverse airborne electromagnetic survey options in optimal combinations with other methods. Our team of experts leverages their in-depth knowledge and our cutting-edge technologies to deliver tailored solutions that optimize further groundwork and mitigate drilling risks.

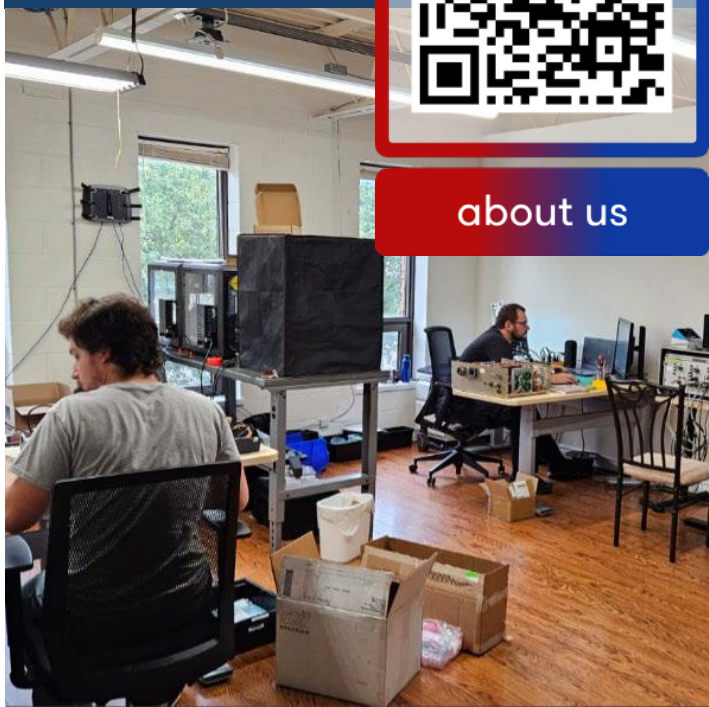


Our team of experts is here to assist you in building a solid foundation of exploration strategies today, ensuring your discoveries tomorrow.

Our team

- Seasoned professionals with extensive experience in geophysics, electronics, and field operations.
- Strong track record of delivering consistent results and exceeding client expectations.
- Collaborative and client-centric approach, ensuring solutions tailored to exploration tasks and goals.

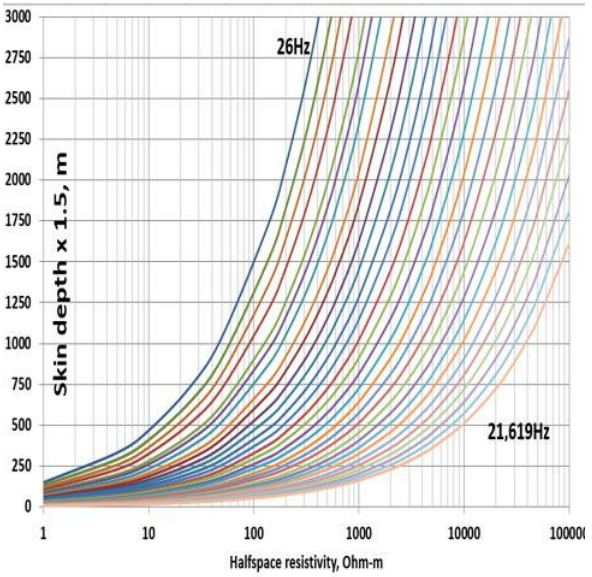
about us



MobileMT

Mobile MagnetoTellurics (MobileMT) is the most advanced generation of airborne natural field (passive) AFMAG technology. MobileMT is the only system proven to deliver geoelectrical information from near-surface to greater than 1 km depth with high spatial resolution. MobileMT combines the latest advances in electronics, airborne system design and sophisticated signal processing techniques to provide unmatched capabilities in the current frontiers of geophysical surveying.

EXPERT GEOPHYSICS
from innovations to discoveries



Specifications

Airborne receiver: Three orthogonal induction coils, 1.4 m diameter

Digitizing rate: 73,728 Hz
Tow cable length: 97 m
Weight: 250 kg
Ground sensors: 4 pairs of electrodes
Frequency range: 25 – 21,000 Hz

Output frequencies: Up to 30 different frequency windows of programmable width may be specified

Output parameters:
Apparent conductivity is computed for selected frequency window;
Inverted resistivity-depth products.

Complimentary data: magnetic field and VLF

MAIN PUBLICATIONS

MINERALS

GEOPHYSICS

MobileMT represents a game-changer in the field of mineral exploration, offering unprecedented capabilities for detecting and mapping critical minerals.

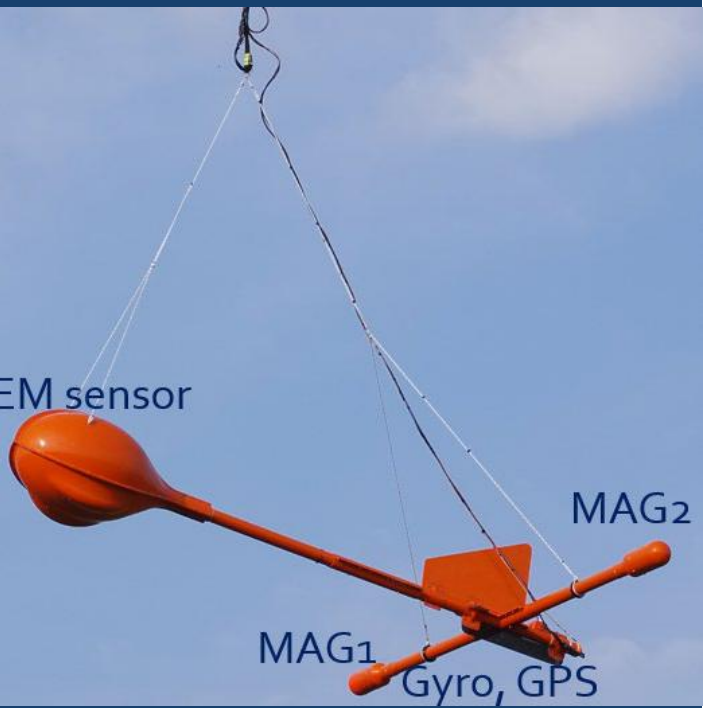
MobileMTm

MobileMTm is a compact version of the original MobileMT system

Airborne receiver has smaller coils, and two magnetometers are installed on the same frame, configured to measure the horizontal gradient of the magnetic field

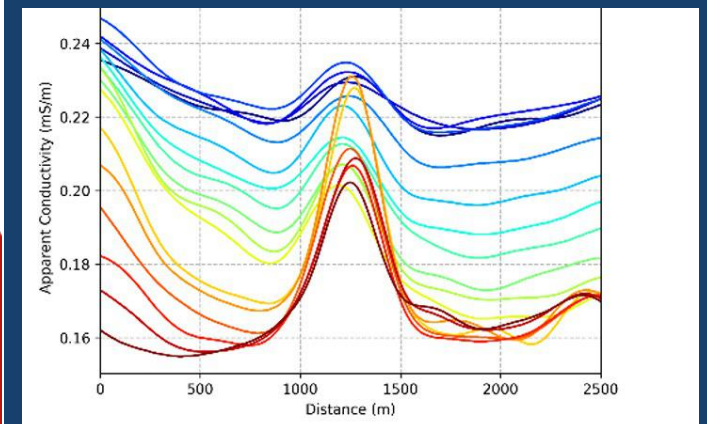
Utilizes EM fields in a slightly higher frequency range (50 Hz to 27 kHz)

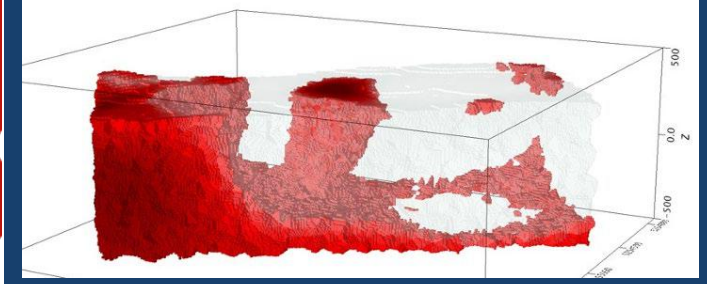
- Developed specifically for detail surveys with < 100 m line spacing and for the identification of discrete targets and structural features
- It is an optimal solution for surveys at high altitudes (>3000 m a.s.l.)
- Can be combined with radiometry



focusing on details

Technical specs





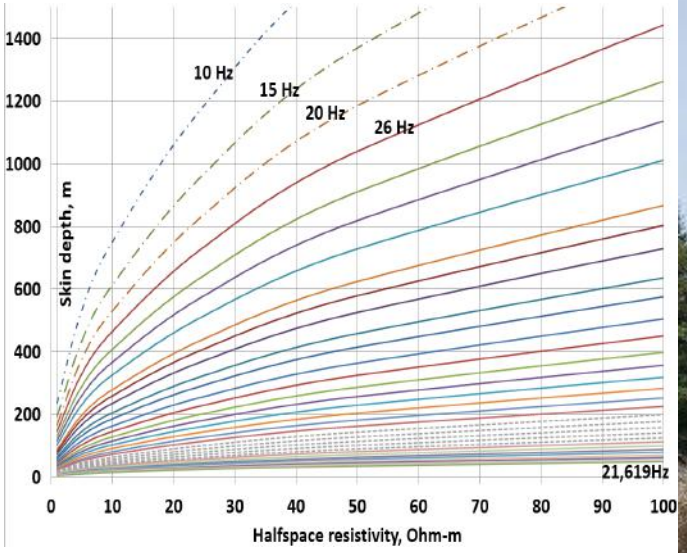
MobileMTd

The following advantages of the drone MobileMT system:

- reducing mechanical noise and getting data at lower frequencies beginning from 10-20 Hz, which is crucial in exploring conductive areas or areas covered by thick conductive overburden;
- flexibility in selecting the optimal survey timeframe amid peak natural electromagnetic activity, including after sunset.

The drone platform option aims to provide better data quality at the depth rather than merely reducing costs. Drones afford us the ability to operate at slower speeds, mitigating motion noise that could compromise data quality. This deliberate choice enhances the overall quality of the data collected, particularly in terms of depth of investigation. Notably, the cost-effectiveness of drone-based surveys is a consequential advantage, especially when compared to the higher expenses associated with helicopter-based surveys.

MobileMTd depth of investigation in conductive environment



MobileMT case studies

Scan and read!

deep gold bearing structures

Critical Minerals

Porphyry and Epithermal

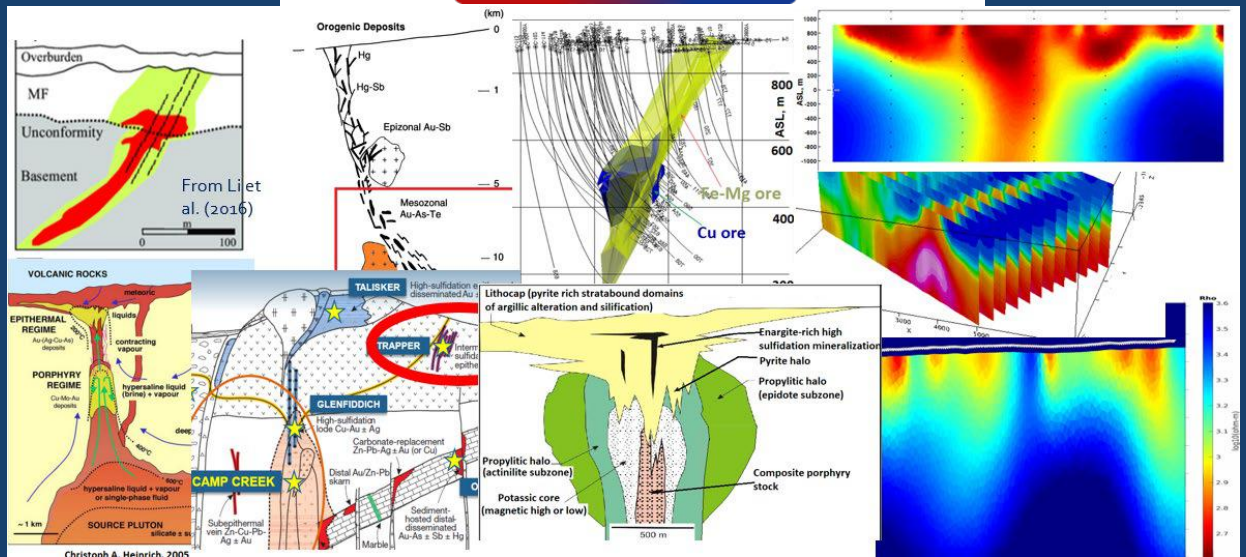
PorphyryEpithermal Abstract

IOCG

Uranium (Athabasca)

Athabasca 2.0

Massive Sulfides

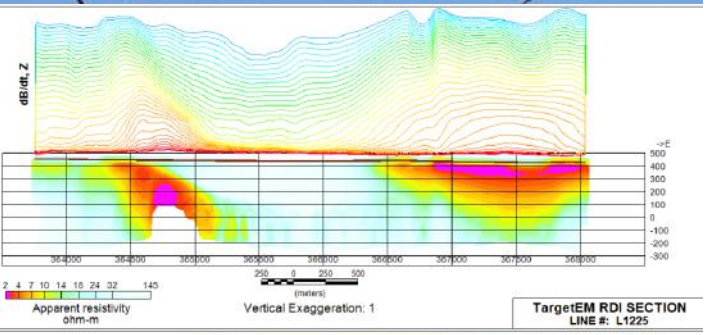


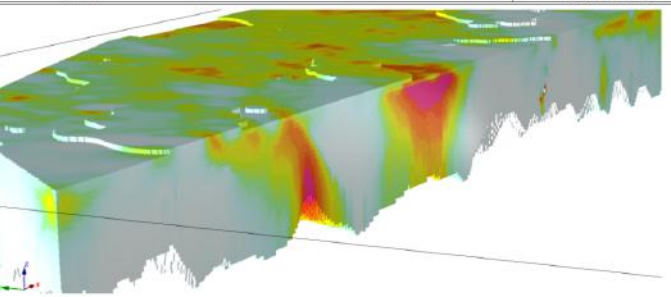
TargetEM

Expert Geophysics Limited developed a series of the airborne time-domain system for commercial surveys worldwide. TargetEM is the latest airborne EM development by the industry-leading R&D team. Currently, there are three TargetEM configurations (21, 26, 31 m diameter) which are fast and easily customizable depending on exploration tasks and terrain conditions.

The main advantages of the TargetEM systems family are the next:

- Very high signal to noise ratio
- Superior rectangular waveform with a short turn-off time
- Dipole moment up to 700,000 NIA
- 3 rigid orthogonal coils (X,Y and Z)
- Full waveform recording at digitizing rate of 73,728 Hz
- dB/dt and B-field data
- Raw streaming or/and stacked & processed data
- complementary MAG and VLF data





TargetEM details

Tech specs

TargetEM is not just another time-domain system. It's a combined time-domain, AFMAG VLF and mag system (+spectrometry on demand).

mTEM (micro-TEM)

mTEM, a time-domain system for detail near surface investigations.

mTEM system advantages:

– Small footprint and high base frequency enable very high spatial resolution;

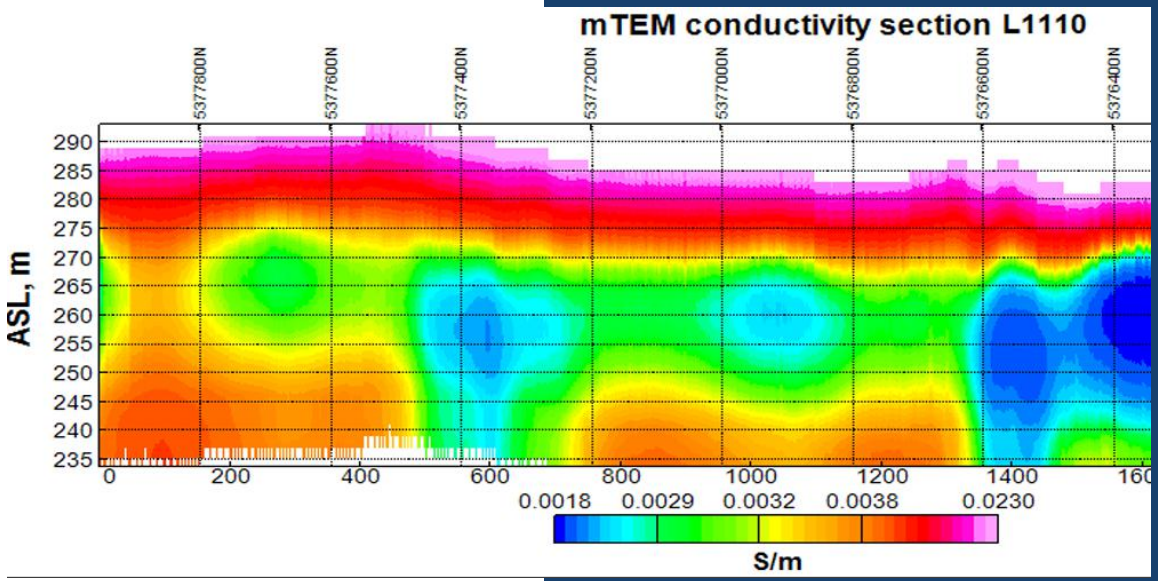
– Detail subsurface geoelectric characterization;

– Designed to work in areas with industrial electromagnetic noise (powerlines).

Saudi Aramco earns recognition for exploration and water management technologies with help of EGL's airborne **mTEM** system.

Tech specs

Best technology award



Complementary methods

Magnetic field

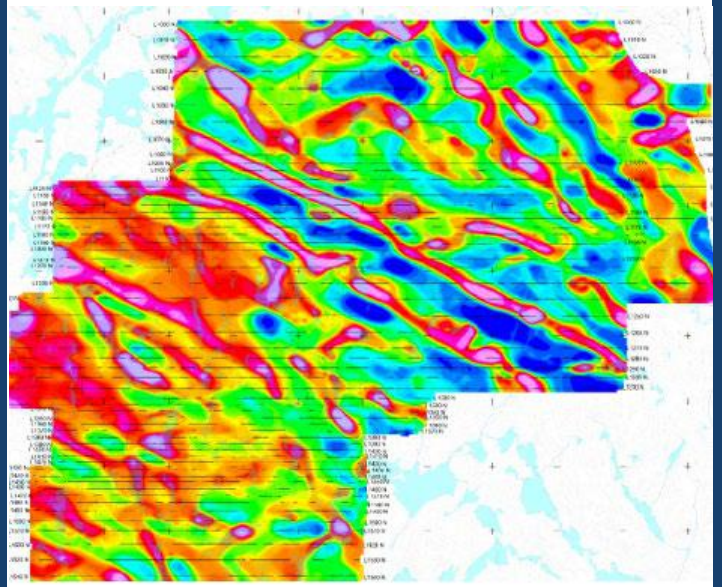
(with all systems)

Radiometry (with MobileMTm, TargetEM)

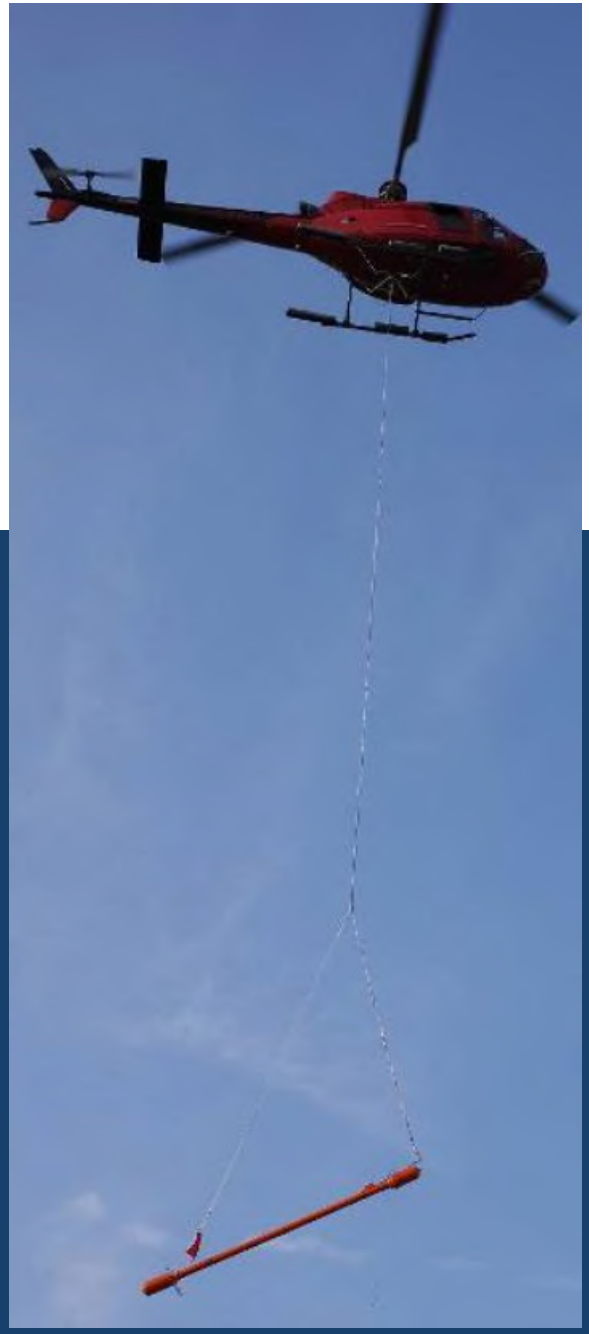
VLF (with MobileMT, MobileMTm, TargetEM)

The airborne magnetometer is a state-of-the-art system developed by EGL. It utilizes a Geometrics G822A or Scintrex CB-3 cesium magnetometer sensor, installed in the separate towed-bird and a high-accuracy Larmor frequency counter developed in house. Magnetometry is combined with all electromagnetic systems, as well as used separately.

Gamma spectrometry – A Radiation Solutions Airborne Gamma Ray Spectrometer RS-500, with a sampling interval of 1.0 second. The RS-500 Series gamma-ray spectrometer is the "Gold Standard" in airborne instrumentation for the detection and measurement of low level radiation from both naturally occurring and man-made sources.

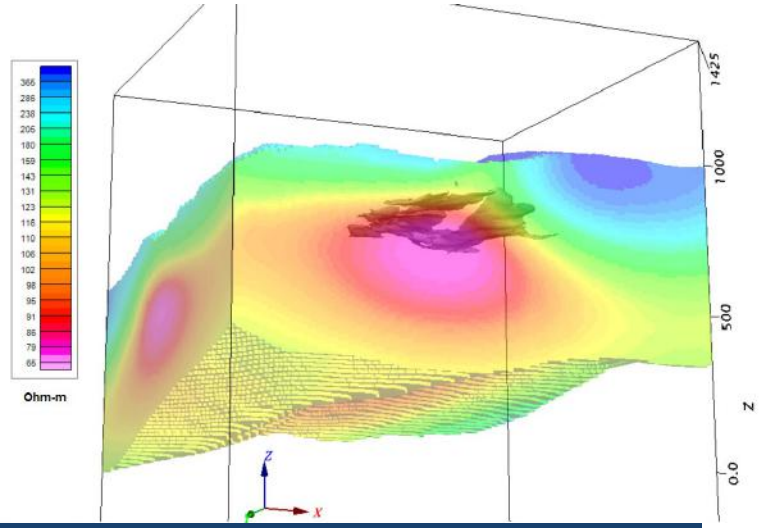


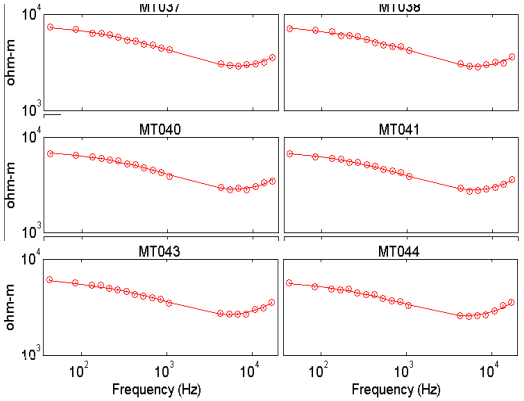
MobileMT VLF amplitude map, 24.8 kHz (northern Ontario)

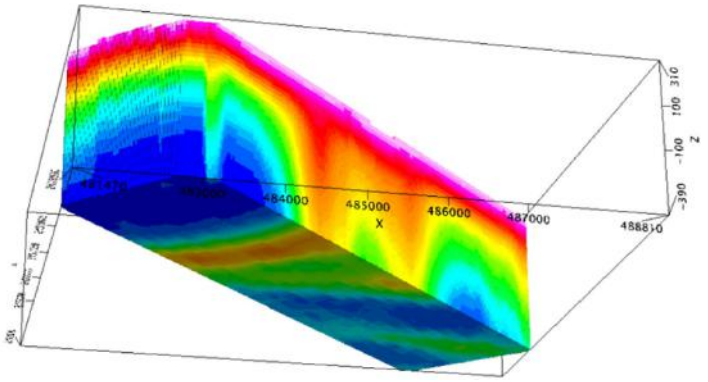


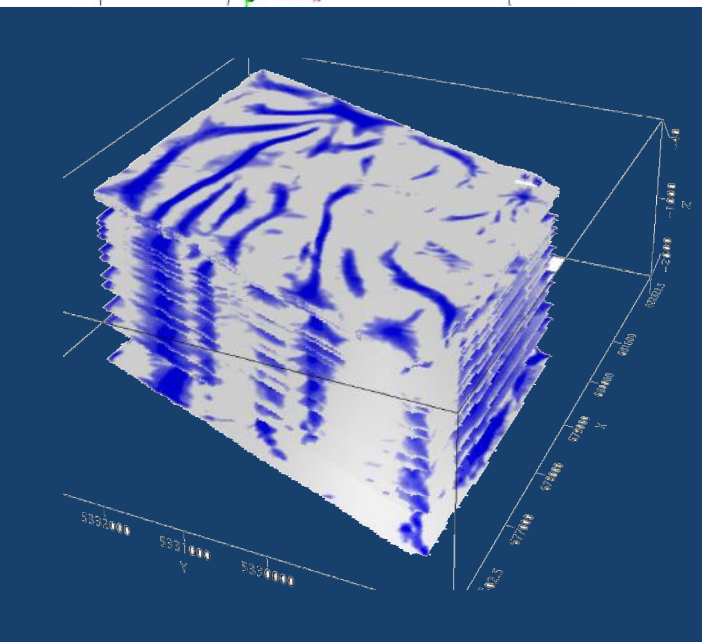
MobileMT survey products

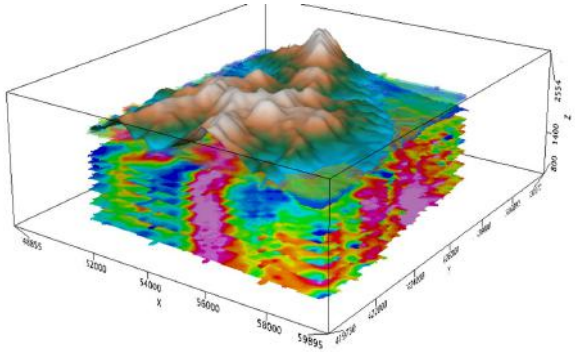
In addition to standard databases, grids, and maps, our deliverables include the inversion or imaging of electromagnetic (EM) data into resistivity-depth products. These products include sections, depth slices, and 3D voxels.

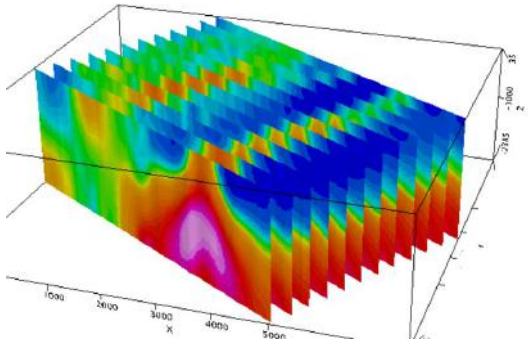


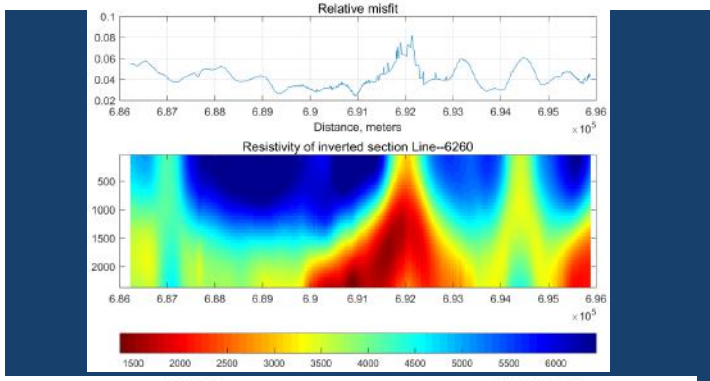


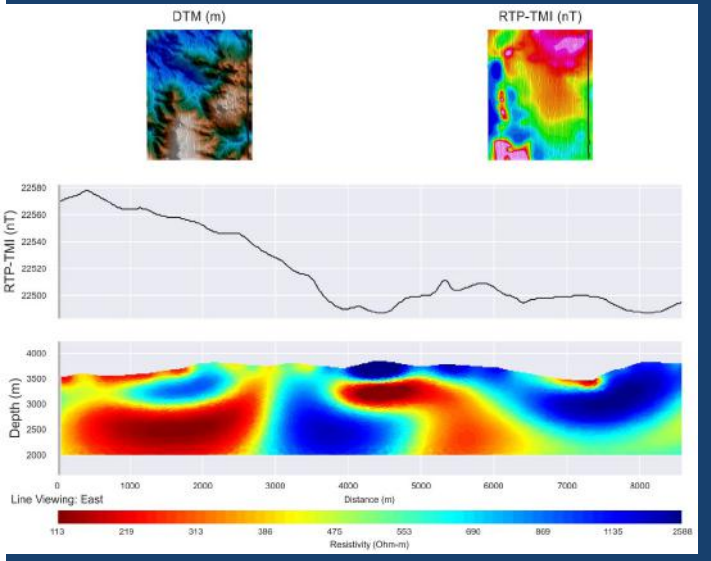












TargetEM survey products

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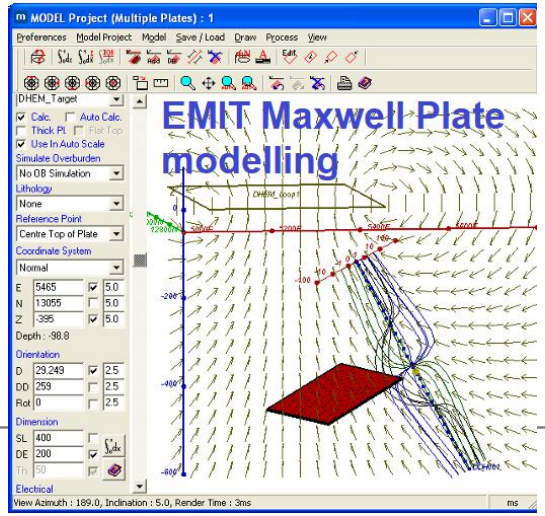
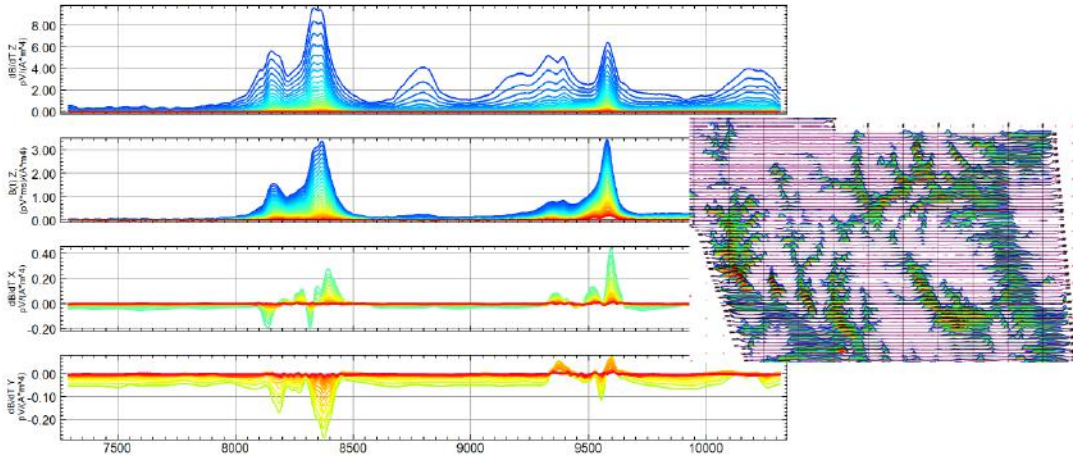
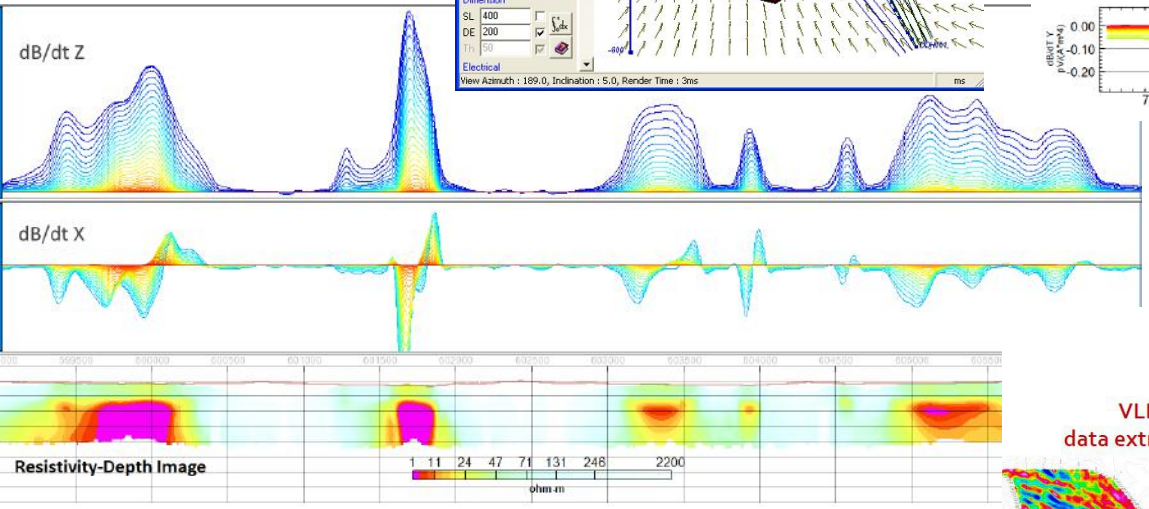


TargetEM time-domain measurements output

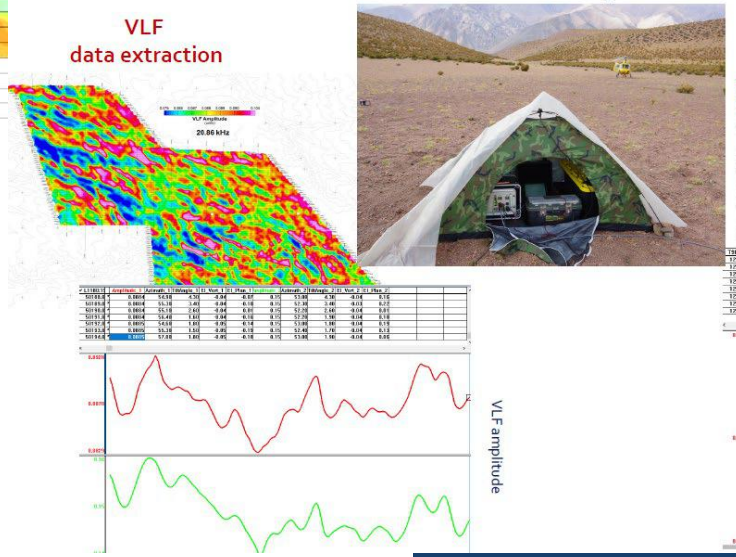




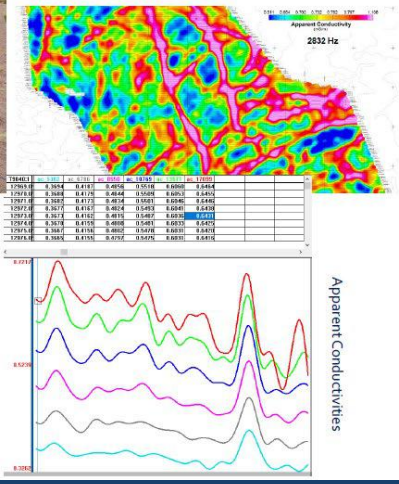
"Passive" EM measurements output

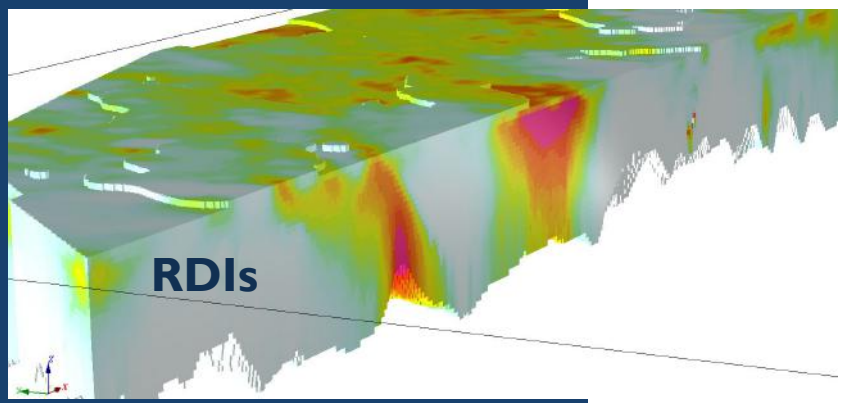
(with additional electric component base station)

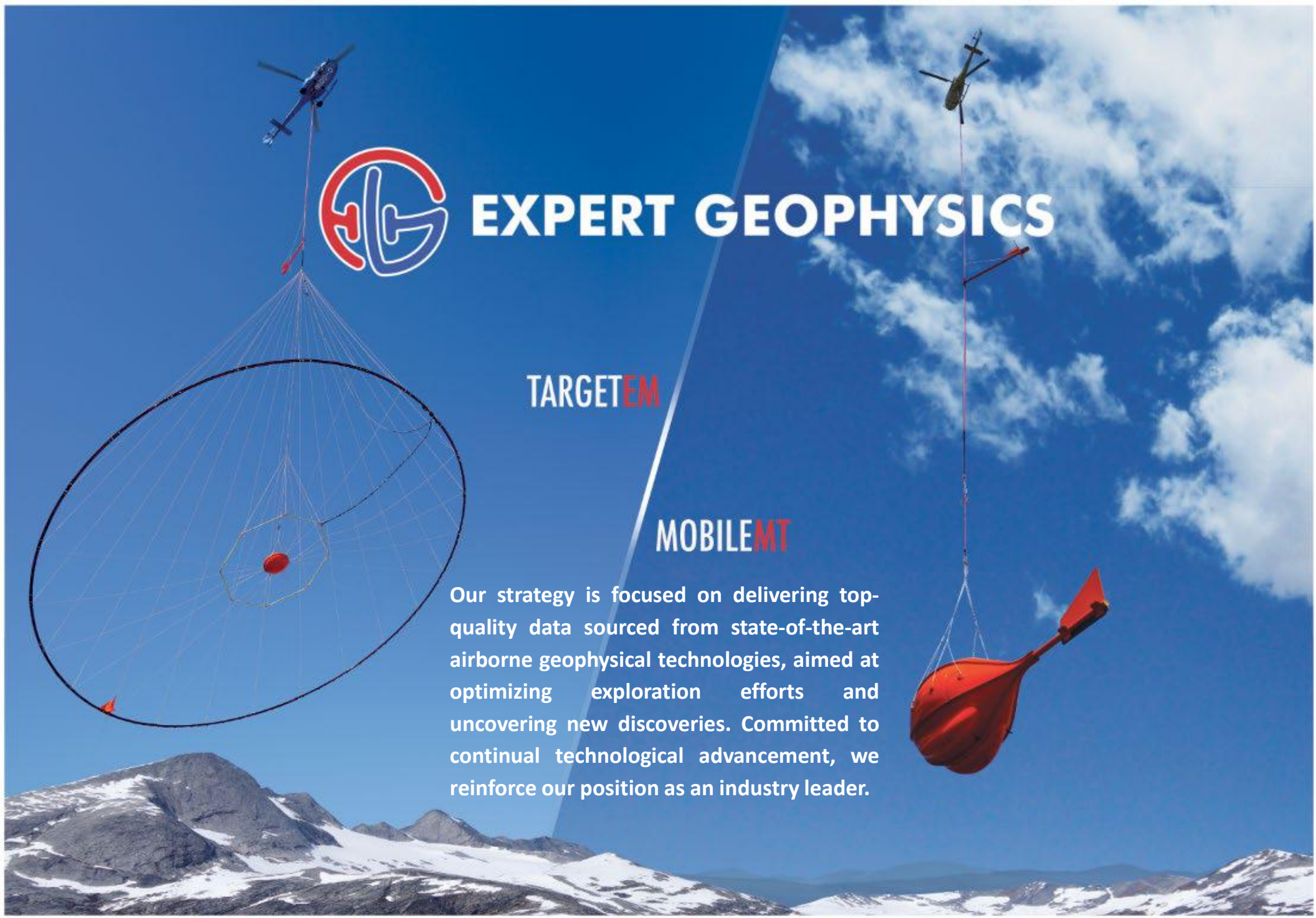
VLF data extraction



Natural field AFMAG data extraction







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