

# Ultra High-Resolution Gradient Magnetic System

Solution by MIDAS®



The **MIDAS®** system was developed to combine the advantages of magnetic gradiometry on a helicopter to offer superior low noise with high resolution magnetic imaging. MIDAS® is the recognized industry standard in helicopter-borne magnetic gradiometry and is available exclusively from Xcalibur Multiphysics.

**WHY USE ONLY ONE?**

Using two horizontally separated magnetic sensors, direct measurement of the horizontal gradient is possible.

By utilizing the measured horizontal gradient in intelligent gridding algorithms, a dramatic improvement in the spatial positioning of magnetic bodies is achieved. As a result, laterally continuous horizons are better resolved.

In addition, the gradient enhancement provides a significant increase in resolution of magnetic features which are parallel or sub-parallel to the flight direction as shown in the bottom right image.

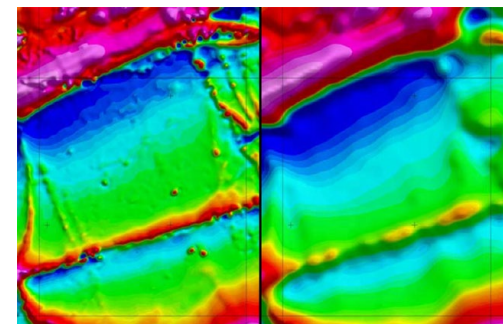
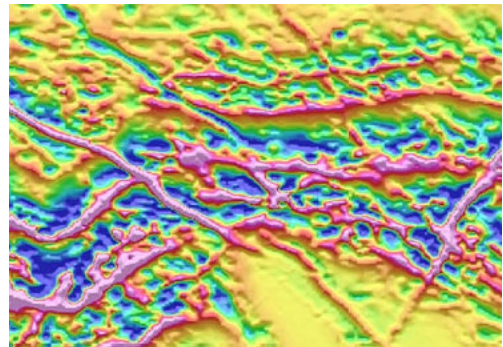
**ADVANTAGES USING MIDAS®**

MIDAS® strengths include:

- A much-improved mapping of near surface magnetic bodies than total magnetic field.
- Provides more geometric information than the total magnetic field.
- Has greater sensitivity to smaller bodies and objects to one side of the flight line.

**HELICOPTER ADVANTAGES OF MAGNETIC GRADIOMETRY**

The slower speed and ability of a helicopter to safely fly at much lower altitudes and in difficult terrain than a fixed wing aircraft makes it an ideal airborne magnetic gradiometry platform. Combined with real time and post flight compensation methods, minimal aircraft noise and high sensitivities are achieved. Two differentially corrected GPS antennas on the sensor array provide accurate positioning to ensure coherency in the MIDAS® gradiometer data.



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