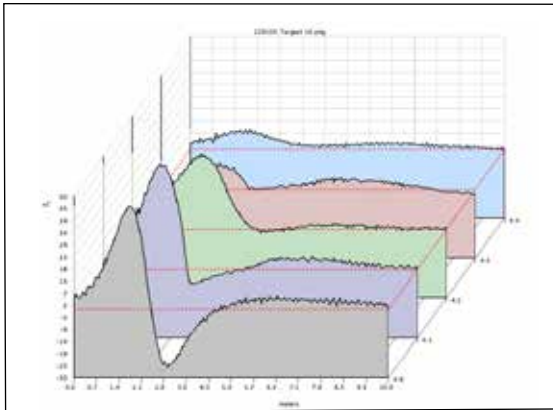
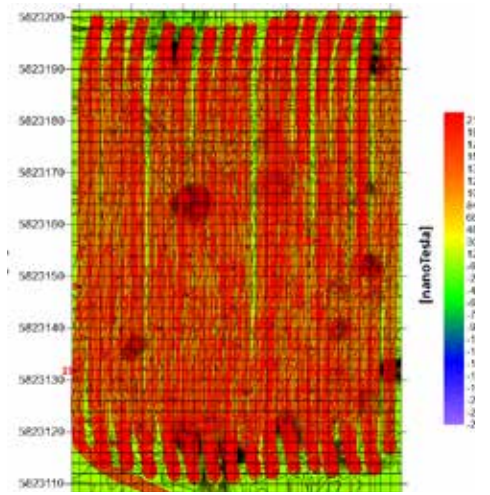
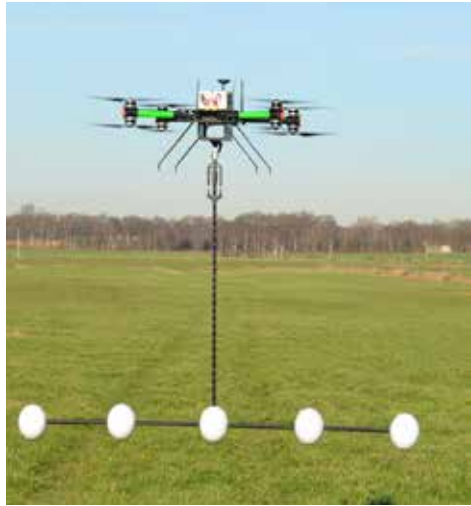




The detection of near surface targets such as landmines and small UXO requires extra care since the surface expression of the buried target may be very limited in size. Such targets would require a flight line spacing of 1 or 2 meters, hard to get with a single sensor.

A key part of the advance described in this newsletter is the simultaneous acquisition of magnetic data from 5 separate fluxgate magnetometers (left hand image) that are spaced 0.5 m apart along a single ‘wand’ suspended below a drone programmed to fly a pattern of flight lines that are separated by 2.5 m. The right hand image shows the 150 north-south lines of magnetic data mapped by a survey of 30 flight lines over a 2-acre area. Special software has been developed to display this type of three-dimensional data to permit careful interpretation of the size and shape of any anomalous-magnetic fields in the data.



WHAT DOES A TARGET SIGNAL LOOK LIKE?

Using custom software, one can scan the complete set of survey data from start to finish. Within the 10 meters of flight line shown in the set of curves to the left, the data exhibit several characteristics across the 2 meters of the wand as well as along about 4 meters of the survey route. The steep slope between the peak and the trough suggests that the source is close to the surface.

We are informed that a horizontal 3.7cm body oriented E-W is buried at 0.3m depth below the anomaly shown in the figure.

The same set of data is shown in the context of a 7-meter long/2-meter wide stretch of the survey. The anomaly is actually more than 4 meters wide with a total deviation from +50 nT to - 25 nT in about 0.5 m. A follow-on survey could be directed to that site to more precisely characterize the signal to help determine the precise location of the source.

