

## **Fixed-Wing Magnetic and Gamma-Ray Spectrometric Surveys**

**NOVATEM** only uses proprietary aircrafts. The magnetic signature of NOVATEM's aircrafts has been considerably improved using especially designed titanium or stainless steel parts. The preference is given to fixed-wings with a lower magnetic signature flying at a lower speed, for a higher radiometric and magnetic resolution. If necessary, several aircrafts are used at the same time to carry out the survey in the best delays possible.

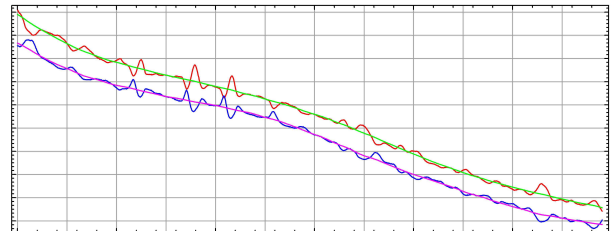


**NOVATEM** uses proprietary navigation, acquisition and compensation software resulting from more than 25 years of practical experience of research and development in airborne geophysical surveying.



**NOVATEM** uses state-of-the-art technology in positioning: a high performance laser whose precision is

better than one centimetre for accurate altitude measurements and an inertial measurement unit (IMU) for both the correction of the positioning measurements and the magnetic compensation. A very small change in the orientation of the fluxgate axis generates a very strong variation of the magnetic measurement. For a magnetic field of 53000nT, a difference in orientation of 0.1° results in a variation of amplitude of more than 100 nT. A positioning error of one axis, even small, thus results in a significant error, which causes anisotropy of the magnetic measurement. It is thus impossible to make accurate compensation measurements with the only use of a vector magnetometer (fluxgate). Inertial Measurement Units (IMU) provides very accurate attitude angles only able to reach the very high resolution of magnetic measurements.



*Example of magnetic compensation of left and right magnetometers for horizontal magnetic gradient measurements.*

Draped measurements became the common standard for both NOVATEM helicopter and fixed-wing surveys. The navigation software makes it possible for the pilot to follow his draping in a more effective and secure way. The navigation software uses pre-calculated heights located all along the profile instead of grids with a real-time research which is time computer consuming. The quality of the draping is now considerably improved as it is easier to follow by the pilot and thus more secure.