

Magnetometer Applicable at Extremely Low-altitude Flights



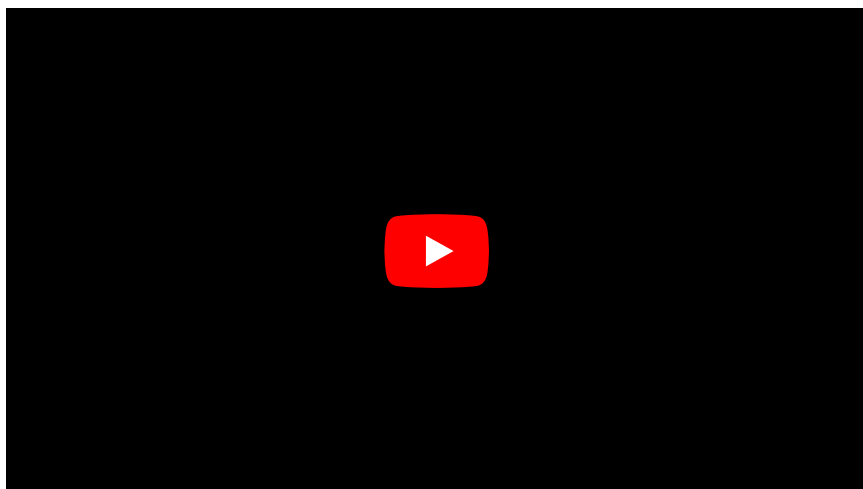
SPH Engineering has completed tests of the Geometrics MagArrow magnetometer together with a radar altimeter and True Terrain Following technology for surveys requiring extremely low altitude (1-2 metres between a sensor and surface). For the developer of UgCS ground control software and solutions for industrial applications, this is part of its strategy to expand its range of supported sensors.

Tests were conducted in two scenarios in Latvia: 1) find underground infrastructure, 2) find magnetic anomalies beneath the bottom of a lake.

Infrastructure detection tests were conducted at SPH Engineering's own test ranges over known targets - different metallic pipes, barrels and smaller metallic items. During the tests over the lake, magnetic anomalies were detected at half a metre beneath the lake bottom, with a water depth of 1-3 metres. The existence of anomalies was confirmed using a low-frequency GPR system.

Fine-tuned system and simplified workflow

In terms of R&D adjustments, UgCS Industrial Solutions determined the optimal position of a radar altimeter on a drone carrying a MagArrow, which is affixed to the UAV using suspension cables. The True Terrain Following system was fine-tuned for this application, and this simplified the workflow to refine the coordinates in the magnetic data with the help of more precise position tracks from UgCS SkyHub onboard computer.



"As of today, MagArrow has been typically used for surveys conducted at high altitude, like minerals prospecting or abandoned wells detection. We can confirm with confidence to [UgCS](#) and Geometrics clients that [True Terrain Following](#) and [MagArrow](#) are fully compatible allowing using the magnetometer in additional scenarios requiring low altitude to gather high-resolution data," Alexey Dobrovolskiy, CTO of SPH Engineering, comments.

"The MagArrow is powered by the MFAM magnetometer, which is a breakthrough in Cesium magnetometer technology. We're very excited to see how people worldwide leverage this groundbreaking technology using the MagArrow, and in our future MFAM magnetometer products. We're really happy to be partnered with UgCS, who are at the forefront of UAV technology. Their extensive testing with the MagArrow and other UAV-magnetometers gives them valuable industry experience in a field that is just now transitioning from an early adopter phase to a mainstream industry," Stefan Burns, senior geophysicist of Geometrics, adds.



UAV equipped with a MagArrow magnetometer.

