

Mining Industry News

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High-Resolution Aerial Images, Precise Open-Cast Mine Surveying, and Other Mining-Related Services

Article Courtesy of ILV-Fernerkundung GmbH

Today, remote sensing is an indispensable part of resource exploration, mapping, and inventory. Remote sensing-based information is used in various socially relevant areas (e.g., in mining). ILV-Fernerkundung GmbH from Berlin is a nationally and internationally sought-after partner in the field of digital aerial photography and processing into 3D models. ILV is active in the field of research and development and offers services as well as training and further education in the areas of remote sensing and GIS technologies. The core of our range of services is the generation and provision of versatile, spatially oriented remote sensing data of the highest quality for geoinformation systems.

Remote sensing, surveying, and 3D GIS are still the main areas of ILV's work today. But we have also been working in the field of marine surveying for several years with our own ships, modern equipment, and experts. The first bathymetric surveys (offshore) were carried out in Nigeria from 2004 to 2006 for the Nigerian Exxon Mobil/NNPC. ILV is also regularly deployed on Austrian and German inland waters. Modern multibeam sonar technology is used here, which is operated from the company's own boats. ILV has also been able to take unmanned measurements with multibeam since 2019. The method is used in areas that are not allowed to be entered, such as closed open-cast mining holes. For this purpose, the boat is deployed using a jack-up screwdriver and then operated via remote control.

Remote sensing technologies are important in all phases of mining. In the initial exploration phases, aerogeophysical methods can be used to determine whether there are resource-bearing soil or rock layers. By flying over the observation areas with an aircraft for larger areas and a drone for smaller areas, more precise information can be obtained, which in turn enables detailed planning. Exploratory and hydrological boreholes are drilled using our own drilling equipment in order to better verify the results obtained.

Together with our partners, such as MIBRAG Consulting International GmbH (MCI), we offer services such as exploration, geology, geotechnics, hydrogeology, and the associated necessary provision of geodata as a basis for a variety of mining-specific topics. Remote sensing for mining also includes digital terrain models or three-dimensional (3D) models. Open-cast mining operations can be monitored at short, regular intervals using aerial imagery and can provide data such as 3D mapping. From the ground, open-pit mining can be monitored using slope monitoring and other methods, such as color texture laser scanning. In addition, bathymetry is also relevant for mining as it can provide detailed data, particularly for hydrogeology.

We are currently working with our partners on a major project with a mining company from Angola. After taking part in different Mining Indabas in Cape Town, PDAC 2023 in Toronto, and FILDA 2024 in Luanda, we now want to present ourselves at MINExpo in Las Vegas in the German Pavilion, Booth #641, in order to establish relationships with potential new customers in the American market.

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