

## Airborne remote sensing platforms

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The integration of optical, thermal, and laser scanning remote sensing data offers valuable insights into the structure and functioning of terrestrial ecosystems. One of the few fully operational multi-sensor airborne platforms in Europe dedicated to ecosystem research is the Flying Laboratory of Imaging Systems (FLIS), operated by the Global Change Research Institute of the Czech Academy of Sciences. FLIS comprises three commercial imaging spectroradiometers. The first two cover the visible to near-infrared and shortwave infrared portions of the electromagnetic spectrum, providing full spectral data from 380 to 2450 nm, which is primarily used to assess vegetation biochemistry, as well as soil and water chemical properties. The third spectroradiometer focuses on the thermal long-wave infrared spectrum, enabling the mapping of surface emissivity and temperature. Additionally, FLIS includes a full-waveform laser scanning system, which captures detailed data on landscape orography and 3D structural features. Complementing the FLIS platform, the potential of hyperspectral drone-based remote sensing will also be explored. Case studies focused on agroecosystems will be presented for both platforms.