



Development of a multi-sensor airborne investigation platform based on an ultra-light aircraft

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In the year 2012 the chair Raw Material and Natural Resource Management of Brandenburg University of Technology Cottbus, Germany started to develop, construct and assemble a multi-sensor airborne investigation system based on an ultra-light aircraft. The conceptual ideas were born several years before and triggered by the increasing demand of spatial underground information, increasing restrictions to access private property and the lack of affordable commercially operated systems for projects with small budgets. The concept of the presented system comprehends a full composite ultra-light aircraft, the Pipistrel VIRUS which combines a low minimum (65 km/h, a high crusing speed (250 km/h, a long range (1700 km) and a low noise potential. The investigation equipment which can be modified according to the investigation target comprises actually a CsI-y-spectrometer in the fuselage, 2 K-magnetometer at the wing tips and a VLF-EM-receiver underneath the tail. This configuration enables the system to operate for mineral exploration, geological mapping, detection of freshwater resources and brines and different environmental monitoring missions. The development and actual stage of the project will be presented. The first operating flight is scheduled for spring 2013.