DESIGN PHILOSOPHY AND REALIZATION OF VUT 001 MARABU EXPERIMENTAL AIRCRAFT AND ITS INFLUENCE ON EDUCATION OF STUDENTS IN AEROSPACE ENGINEERING

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Abstract. The paper describes one of possible approaches for realization of UAS (Unmanned Aircraft System) / UAV (Unmanned Aerial Vehicle). It is especially dedicated to gaining of theoretical and practical experience leading to application of UAS/UAVs in the civil sector. It also describes participation of students of aerospace engineering on practical design and realization of the aircraft.
First idea for described activities came from an active participation of Institute of Aerospace Engineering / Brno University of Technology (IAE) in UAVNET project (Unmanned Air Vehicles for Civilian Purposes; 5th FP EU project). The project emphasized civil applications that still fall behind military UAS/UAV applications. This "delay" is mainly caused by legislative limitations for operations of bigger aircraft in the civil airspace. Solution adopted for VUT 001 Marabu project solves this issue through design of piloted experimental aircraft. Whole project is unique in academic environment. Since it is not primarily focused on the development of ground element, the acronym UAV is used in the paper.