

DESIGN OF A SOLAR RPAS FOR EXTENDED SURVEILLANCE MISSIONS

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***Abstract.** The design of a very long endurance electric remotely piloted aircraft system (RPAS) accomplished by a multidisciplinary team of LAETA researchers is presented. The RPAS mission requirements are derived from civilian surveillance applications, such as forest, coast or border patrol. Very long endurance is achieved by an electric propulsion system assisted with solar cell arrays and a careful lightweight airframe design. The main steps of the design are covered, including numerical simulations, as well as construction, component and systems testing and flight testing. The feasibility of a green, low cost, small footprint RPAS is demonstrated.*