Custom Designed Small Unmanned Aerial Vehicle

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Key words: Small electric unmanned aerial vehicle, UAV, strong body, electric motor, remote control, cheap parts and materials. Aim of project: Elaborate, make and test custom designed small strong body digital remote controlled electric unmanned aerial vehicle (UAV), with the range up to 35 km, altitude up to 3,000 m, load under 1 kg (for short, category “CLOSE”). Hypothesis: One can make custom design and construction of small digital Remote Controlled Strong Electric UAV (for short, RCSE UAV) from widely available details and materials, for photo and video. Work Stages: 1) Acquaintance with main laws of aerodynamics and functions of component parts of UAV. 2) Design and computation of aircraft body parameters and electric engine power, make drawings using Corel Draw. 3) Selection and obtaining parts and materials, production and tests of the unmanned aircraft. Technique of research and development: Use of aerodynamics laws for aircraft, design and engineering, construction of body and remote controls fulfilling the requirements, and tests of UAV. Novelty of the project: Know how in custom design and production of RCSE UAV, category CLOSE, from widely accessible and relatively cheap parts and materials. Result and conclusions: UAV with mentioned range, altitude, and load has been custom designed and built using strong materials for its body and electric motor. With the installed camera onboard, we tested UAV, obtained pictures/video of landscape. Practical use: RCSE CLOSE UAV is appropriate for quick and frequent deploys, and use for photo, filmmaking, and remote sensing in various areas.

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