World Academy of Science, Engineering and Technology
International Journal of Aerospace and Mechanical Engineering
Vol:10, No:01, 2016

Design, Prototyping, Integration, Flight Testing of a 20 cm Span Fully Autonomous Fixed Wing Micro Air Vehicle

Authors : Vivek Paul, Abel Nelly, Shoeb A Adeel, R. Tilak, S. Maheshwaran, S. Pulikeshi, Roshan Antony, C. S. Suraj

Abstract : This paper presents the complete design and development cycle of a 20 cm span fixed wing micro air vehicle that was developed at CSIR-NAL, under the micro air vehicle development program. The design is a cropped delta flying wing MAV with a modified N22 airfoil of 12.3% thickness. The design was fabricated using the fused deposition method- RPT technique. COTS components were procured and integrated into this RPT prototype. A commercial autopilot that was proven in the earlier MAV designs was used for this MAV. The MAV was flown fully autonomous for 14mins at an open field. The flight data showed good performance as expected from the MAV design. The paper also describes about the process involved in the design of MAVs.

Keywords : autopilot, autonomous mode, flight testing, MAV, RPT
Conference Title : ICAAA 2016 : International Conference on Applied Aerodynamics and Aeromechanics
Conference Location : London, United Kingdom
Conference Dates : January 18-19, 2016