

ABSTRACT

Micro air vehicle (MAV) has been developed in various countries such as America, Singapore, India, Taiwan and others. In Indonesia no one has developed MAV technology, especially Ornithopter. Ornithopter is a robot that looks like a bird that can fly by flapping its wing. There are several types of Flapping Wing mechanisms including: Straggled Crank, Single Gear Crank, Dual Gear Crank and Transverse Shaft.

The making of Ornithopter begins with the creation of a design using Autodesk Inventor Professional 2015. The finished design printed uses 3D Printing whose basic material comes from filament plastic. For the working system, ESC ultralight is used for speed control of brushed motors with large torque and relatively high speed. ESC ultralight connects with the FS2A receiver to obtain input signals from the remote control.

Of the 4 experiments, there is an ideal Ornithopter Single Gear Crank with specifications of a wing length of 43 cm, tail length of 14.5 cm, weight of 45 grams. And Flapping Mechanism with 50 mm Mechanism width, 70 mm Mechanism height, 32 mm algae length and 32.62° flapping angle. With the best brushed motor using the Coroless 820 brand.

Keywords: MAV, Flapping Wing, Ornithopter,ESC