ABSTRACT

Improvement in UAV (Unmanned Aerial Vehicle) technology is increasing rapidly. The need for unmanned aircraft technology to help overcome some problems has been developed. Examples of its utilization are for mapping, monitoring, logistics et cetera. However, some of these benefits can only be done separately, because unmanned aerial vehicle have their own characteristics and mission. With the innovation of unmanned aerial vehicle Lokeswara is expected to be able to carry out all missions simultaneously.

The Lokeswara unmanned aerial vehicle is a flying-wing configuration aircraft that has the characteristics of being able to fly agile and fast. The material used is composite, with the Contact Molding manufacturing method. The process of designing unmanned aircraft uses the Autodesk Inventor Professional 2016 software.

The results of the unmanned aircraft design are its dimensions as well as the test flight data. The dimensions of the unmanned aircraft have a wingspan of 1.5m, fuselage length of 0.9m, load capacity of 343cm^3 as much as 4 units. Airplane characteristics data obtained are: MTOW (Maximum Take-off Weight) 3.2 kg, Stall Speed 8.6 m/s, and cruising speed 14 m/s.

Keywords: Unmanned Aerial Vehicle, Flyingwing, Inventor, Contact Molding.

INTISARI

Kemajuan teknologi pesawat tanpa awak kini semakin pesat dan meluas. Kebutuhan akan teknologi pesawat tanpa awak untuk membantu mengatasi beberapa masalah sudah dikembangkan. Contoh pemanfaatannya adalah untuk pemetaan, pemantauan, pengiriman logistik dan lainnya. Namun dari beberapa manfaat tersebut hanya dapat dilakukan secara terpisah, karena pesawat tanpa awak memiliki karakteristik dan misi tersendiri. Dengan adanya inovasi pesawat tanpa awak Lokeswara diharapkan dapat melakukan keseluruhan misi secara bersamaan.

Pesawat tanpa awak lokeswara merupakan pesawat dengan konfigurasi flyingwing yang memiliki karakteristik mampu terbang dengan lincah dan cepat. Material yang digunakan adalah komposit, dengan metode manufaktur *Contact Molding*. Proses perancangan pesawat tanpa awak menggunakan *software Autodesk Inventor Professional* 2016.

Hasil dari perancangan pesawat tanpa awak ini didapatkan data dimensi pesawat tanpa awak, serta data uji terbang pesawat tanpa awak tersebut. Dimensi pesawat tanpa awak tersebut memiliki bentang sayap 1,5m , panjang *fuselage* 0,9m, kapasistas volume muatan 343cm^3 sebanyak 4 buah. Data karakteristik pesawat didapatkan MTOW (*Maximum Take-off Weight*) 3,2 kg , *Stall Speed* 8,6 m/s , dan *cruising speed* 14 m/s.

Kata Kunci: Pesawat Tanpa Awak, *Flyingwing, Inventor, Contact Molding*