

Search

Alerts

Lists

My Scopus

[Back to results](#) | 1 of 1[Full Text](#) | [View at Publisher](#) | [Export](#) | [Download](#) | [Add to List](#) | [More...](#)

2015 10th Asian Control Conference: Emerging Control Techniques for a Sustainable World, ASCC 2015

8 September 2015, Article number 7244701

10th Asian Control Conference, ASCC 2015; Sutera Harbour ResortKota Kinabalu; Malaysia; 31 May 2015 through 3 June 2015; Category numberCFP15832-ART; Code 117644

Development of load carrying and releasing system of hexacopter (Conference Paper)

Zakaria, A.H., Mustafah, Y.M., Hatta, M.M.M., Azlan, M.N.N.

Department of Mechatronics Engineering, International Islamic University Malaysia, P.O Box 10, Kuala Lumpur, Malaysia

[View references \(4\)](#)

Abstract

An unmanned aerial vehicle (UAV) which is integrated with the gripper system is able to provide diverse service to the society. The objective of this project is to develop a **load carrying and releasing system** for **hexacopter** platform. The proposed method is to use the **hexacopter** with high payload capable of flying while **carrying** some extra **load**. A gripper **system** with the ability to hold and release the preloaded object is designed to enable the **hexacopter** to transport objects. The **load carrying and releasing system** releases the object after receiving an instruction from the user. During the flight, mission planner is used to monitor the flight status. The **hexacopter** performance was evaluated through a series of flight tests. The result from the experiments show that the total flight time of the **hexacopter** reduced by 5 minutes from the normal time of 15 minutes when the **load carrying** mechanism is attached. This is because attaching the mechanism increases the total payload by 800grams from the normal payload of 2.2kg. Payload increment means higher current drawn from the battery to produce higher motor speed. Attaching the mechanism also affects the stabilization of the UAV. Hence, retuning of the PID controller was performed in order to correct the flight attitude of the UAV. This project successfully demonstrated the **development of load carrying and releasing system** which might serve as guidelines for other related future projects. © 2015 IEEE.

Author keywords

Flight Time; Hexacopter; Load Carrying and Releasing system; PID; Speed

ISBN: 978-147997862-5 Source Type: Conference Proceeding Original language: English

DOI: 10.1109/ASCC.2015.7244701 Document Type: Conference Paper

Volume Editors: Selamat H., Ramli H.R.H., Faudzi A.A.M., Rahman R.Z.A., Ishak A.J., Soh A.C., Ahmad S.A. Sponsors: Malaysia Convention and Exhibition Bureau (MyCEB), Malaysian Palm Oil Council (MPOC), Ministry of Tourism and Culture Malaysia, Sabah Tourism, Visit Malaysia Year 2015 Publisher: Institute of Electrical and Electronics Engineers Inc.

References (4)

[View in search results format](#)

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert](#) | [Set citation feed](#)

Related documents

Study of 3-jaw gripper architectures

Quaglia, G., Butera, L.G.

(2015) *Advances in Intelligent Systems and Computing*

A constant-force compliant gripper for handling objects of various sizes

Wang, J.-Y., Lan, C.-C.

(2014) *Journal of Mechanical Design, Transactions of the ASME*

Optimal grasp of vacuum grippers with multiple suction cups

Mantriota, G.

(2007) *Mechanism and Machine Theory*[View all related documents based on references](#)

Find more related documents in Scopus based on:

[Authors](#) | [Keywords](#)