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MULTI-ROTOR DRONE TO FLY AUTONOMOUSLY ALONG A RIVER USING A SINGLE-LENS CAMERA AND IMAGE PROCESSING

AKHMAD TAUFIK[1], SHINGO OKAMOTO[2] & JAE HOON LEE[3]

[1,2,3]Graduated School of Science and Engineering, Ehime University, Bunkyo-cho, Matsuyama-shi, Japan, Tokyo

[1]Center for Mechatronics and Control Systems, Department of Mechanical Engineering State Polytechnic of Ujung Pandang, Perintis Kemerdekaan Km, Makassar, Indonesia, Jakarta

ABSTRACT

The purposes of this research are to develop an lgorithm to perform an autonomous flight along a river and to carry out experiments in which a multi-rotor drone performs the autonomous flight. We, authors firstly developed the algorithm to divide a photo image into a river area and the other parts and determine the direction that the multi-rotor drone should fly ahead. Then, we carried out flying experiments performed by the AR.Drone 2.0 (Parrot) as the multi-rotor drone using a single-lens camera and the image processing developed by authors installing on a personal computer (PC). The multi-rotor drone and the PC were connected each other through a wireless connection (Wi-Fi). The experimental result shows that the drone could autonomously fly along the river for the distance of 83 [m].

KEYWORDS: Multi-Rotor Drone, Autonomous Flight, Single-Lens Camera, Image Processing