

Development and Test of an Open Source PX4 Controller for omnidirectional Unmanned Surface Vehicle

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Abstract : In this paper, a control system that bridges the gap in support for Unmanned Surface Vessels in the PX4 Opensource Autopilot was developed. The system is designed for an omnidirectional water craft with four motors. A modular autopilot architecture design centred around publish-subscribe interprocess communication was used. The paper presents the implementation and integration process of a generic surface vehicle controller capable of driving any configuration of motors through the recently introduced in control allocator in PX4 autopilot. The proposed approach was successfully tested in a case study through implementation on the ASV Perkoz.

Keywords : control system, PX4, drones, rovers, surface vessels, omnidirectional

Conference Title : ICAVAD 2023 : International Conference on Autonomous Vehicles and Autonomous Driving

Conference Location : Amsterdam, Netherlands

Conference Dates : September 11-12, 2023