

Development of a Life-Saving Drone

Metin Volkan DANA, Ümütcan BALÇIN, Muhammed Sultan ALTINTEPE

Supervisor: Prof.Dr.Ergun ERÇELEBİ

Department of Electrical and Electronics Engineering, University of Gaziantep, Turkey.



Abstract

Drowning is the third leading cause of preventable death in the world. Drowning incidents at beaches are a threat to sea safety. In this project, we developed a drone model to prevent drowning incidents at beaches. The drone is a quadcopter type that can be controlled by remote and can carry a life jacket. The drone can intervene quickly and effectively to people who are in danger of drowning. The design, performance, advantages and disadvantages of the drone have been presented in this project.

Flow Chart



Main Components

Brushless Motor, Flight Control System, Arduino, ESC, Remote Controller

Main Board

We have designed a quadcopter model and coded remote control operation. We have used Matlab and Simulink for circuit design and simulation. This quadcopter can efficiently hold and deploy a life jacket and can respond quickly to intervention for individuals in drowning.

Conclusion

BeachGuard by means of our innovative quadcopter life-saver, provides a quick and effective solution to address drowning incidents at beaches. Ongoing research aims to enhance its capabilities, ensuring a safer environment for beach tourism.

References:

- World Health Organization, 'Drowning' 2020.
- Y. D. Özcan, A. H. Yıldız, K.T. Erkan ve A. Pınar, 'Drone Programlamaya Giriş ve Simülasyon Teknolojilerine Genel Bakış,' TÜBİTAK BİLGEM YTE Blog, 2022