Crowdfunding Campaign: Robobuoy

Dear Reader,

Many of you may already know that I have started an exciting project to develop an autonomous buoy system, named Robobuoy. This initiative came from the frustration many of us face when laying out and retrieving buoys for racecourses. The process can be laborious, and that's where Robobuoy comes in.

The goal of Robobuoy is to automate this task for us. It's simple to use: you attach Robobuoy to your standard buoy. Once the buoy is in position, you flip a switch, and Robobuoy will automatically maintain its position until you turn it off.

Robobuoy Features

Robobuoy consists of three key components:

1. Top

A small box containing a GPS receiver, a Wi-Fi network, a Lora connection, a switch, and a push button. This component is responsible for positioning and communication.

2. Sub

An underwater module that sits between the buoy and its anchor weight. It contains the battery, control electronics, thrusters, and Wi-Fi for propulsion and stability.

3. Charging Station

A station onshore that houses the electronics to charge the batteries. A push button on the station allows the buoys to autonomously return to the dock when needed.

Progress So Far

Thanks to NicE Engineering, who generously built a working prototype at no cost, we have successfully tested Robobuoy several times at our club. The prototype meets the following goals:

- Easy to use.
- Low maintenance.
- Operates for a minimum of 4 hours.
- Easy to recharge.
- Does not interfere with the normal functioning of the buoy.
- Open-source project.

Why We Need Your Help

To take Robobuoy to the next level, we need your support. The current prototype has proven successful, but we need to build a version robust enough for real-world sailing conditions at WSVOP. NicE Engineering has kindly offered to design the hardware and develop the software for free, but we still need funding to build three buoys and a charging station.

Our fundraising target is EUR1,600, which will cover the materials for the buoys and the charging station.

Donation Details

Donations can be made to the following account:

P.N. de Nijs

NL46 ABNA 0466464487

Please mention 'Robobuoy' as the payment reference.

Thank you for your generosity and support!

Technical Details

Component Breakdown and Costs

Top Module

GPS Neo8	1	EUR15.00	EUR15.00
PCB (NicE RobobuoyTop V1.0)	1	EUR35.00	EUR35.00
Casing	1	EUR28.00	EUR28.00
433MHz Antenna	1	EUR5.00	EUR5.00
LiPo S1 Battery	1	EUR3.80	EUR3.80
Miscellaneous		EUR20.00	EUR20.00
Total			EUR86.80

Sub Module

Thrusters (TOOPRE)	2	EUR22.50	EUR45.00
S6 DXF LIPO Battery	2	EUR73.40	EUR146.80
M16 PCB Connectors	1	EUR11.70	EUR11.70
ESC 40A S6	2	EUR16.70	EUR33.40
PCB (NicE BobobuoySub V1.0)	1	EUR50.00	EUR50.00
Casing	1	EUR15.00	EUR15.00
Miscellaneous		EUR20.00	EUR20.00
Total			EUR321.90

Charging Station

ToolkitRC C6 50W Charger	3	EUR30.00	EUR90.00
Casing	1	EUR100.00	EUR100.00

Wiring	1	EUR50.00	EUR50.00
Lora Module (433MHz)	1	EUR8.00	EUR8.00
Wi-Fi (ESP32)	1	EUR5.00	EUR5.00
Connectors (Misc)	3	EUR20.00	EUR60.00
Total			EUR313.00

Grand Total: EUR1,539.10

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