

1/10 ShipsterNet - your digital deckshand for a truly smart boat

A digital deckshand that constantly monitors your boat and exchanges data with a network of sailors.

ShipsterNet

Motivation

All the pleasure crafts on the oceans, rivers and lakes on planet earth have one thing in common: they swim in the essence of life. Water is the source of life and is crucial for our global climate, economy, transportation, nourishment – in short our survival! Fact is that we know much too little about all the aquatic environments, be it water and air temperature, atmospheric pressure, wind, humidity, salinity, waves and several other measurements. One goal of ShipsterNet is to bring mariners together to collect data – for oceanographic research and for open sea charts (OpenSeaMap project) – but also for the owner of the boat, whenever he's not on board, and for the crew to check in, have all boat data available in your pocket / on your wrist / on any other smart device.

Implementation

Our company will provide the backend databases and web interface that record all the logged data by the vessels. The data will be a personal logbook, but also distributed to oceanographic institutes and organizations like the OpenSeaMap project.

Data collection will be achieved by an onboard computer, which will come in different choices: as a freemium smartphone app, that records GPS and motion data (if smartphone is left fixed to the boat, its motion like heeling, rolling and pitching can be estimated). A low energy single-board computer should be available for an attractive prize (between 150 and 400\$), which continuously collects data, acts as a WiFi gateway with optional internet access. An adapter for the onboard bus system (NMEA2000, NMEA0183, Seataalk-ng, Seataalk1, ...) will provide additional sensor information to read out the onboard sensors like wind, log and depth. This data will be distributed to all connected smart devices, so that every crew member can set up his individual data screen.

With all crew members logged into the system, it is aware of when WiFi signals get lost and potentially a crew member might be over board, which is logged and an alarm will sound, so an easy retrieval is possible. For several sailors autopilot control might be a further need, but this development is planned at a later stage.

Furthermore, the onboard computer can act as an energy monitor if the classic fuses are replaced with smart fuses (commonly used in automotive industry) and switch devices and lights automatically or and remotely by the user by his smart device. This also allows to monitor the energy demand of different consumers and production of suppliers, as well as the health of the batteries, which is crucial for onboard energy systems.

Outcome

With such an observation system for boats, a new era for boat owners will come up. They will always feel under control wherever they are, and wherever their boat is. Harbor masters or nearby other sailors can be alarmed or contacted if the boat is experiencing high acceleration (e.g. loose lines, broken fenders, unfurled sails), the bilge pump is activated or a high energy draw is detected. On sea, the boat and its current condition is always visible to other (selected) people, and in case of emergency (high wind, bilge pump active) to sea rescue. This might open up another huge market potential for renting out private yachts (airbnb for boats) as well as for private skippers (Uber for boats).

Solution

Pleasure crafts are spread over all oceans, but most of the time they spend tied to a dock or kept on an anchor. With commonly available sensors, many already installed, these boats can act as a smart sensory network that share data about wind, weather, waves, tide, water depth and so much more. This data is used for better weather and climate forecasts, to create open sea charts, and to make it easier to give your boat away to other people. Constant monitoring assures safety on and off board.

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In summary, what is your “Made on Coboat” project idea (max. 3 sentences)?

My project idea to read out Coboat's onboard sensor network, track the boat's motion and exchange this data onboard with smart devices and with a central internet server. This data is vital to oceanographic and atmospheric research institutes, yacht charters, skippers, but also for sea rescue services in case of emergency.

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How much of your project can you realistically achieve in 100 days if you will get the chance to stay on the Coboat?

The prototype development is already in a very advanced stage, so on board of Coboat I will concentrate on database, bandwidth-dependent communication, software interface and app development.

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Will you complete this project on your own, or will you be working with a together with a team?

I will be working with two co-founders, one is in the automotive onboard networks business and the other in luxury yachts software development.

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Why should your project be chosen?

Because it is meant to be on a boat! Because it serves marine environments! It makes life on board easier, so you can do other things while sailing (like working on your startup), even if you're all by yourself.

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What does this project mean to you?

It combines my passion, my research and my drive for independent work. I've always had waterlust in my blood and as an avid sailor, kitesurfer, diver and underwater robotics researcher, I think this is just the next step for me.

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Why do you want to do this project?

I believe this project can change the way mariners interact with marine environments. I want to raise awareness about the state of the ocean and want everybody to be able to contribute to oceanographic research, just by doing what they love to do. And at some point, the borderline between oceanographic researchers and sailors will blur similarly to how Coboat blurs the line between sailing and working.

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Have you used any third-party material? Even if you've modified it, please ensure you source the original here. See FAQ for details.

No

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Please tell us a bit about yourself and your professional background. How do you fit into a team? What have you done before within the field of your idea?

I've done research on underwater robotics and unmanned aerial vehicles, worked for Skysails (kite propulsion for cargo ships) and am an avid automation engineer. At the institute of Mechanics and Ocean Engineering, I taught the toughest Mechanics classes and sent the best students to UC Berkeley, where I've been myself for my Diploma Thesis. My professional network in the Bay Area reaches from Tesla, Apple, Google to smaller startups like 3Drobotics, Cruise, LiquidRobotics, SailDrone and others.

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Creative's profile



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