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TRAWLER OCEAN CARE SYSTEM

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ABSTRACT

Based on the recent survey border crossing of Indian fisherman are unsusceptible increased, to such an amenable problem a safe system must be designed. To overcome this situation a trawler ocean care system is proposed to aid the people who are crossing the border. This work is an association of hardware peripherals GPS, Microcontroller and buzzers. This device will be responsible for monitoring, alerting, controlling and stop engine, to provide a safe journey to the fisherman.

Keywords- GPS, Engine control, alerting.

I. INTRODUCTION

The border crossing issue of Indian fisherman in srilanka has been increased in day to day life. The people who are crossing the border do not have any knowledge about what they are doing and they do not have any high technology to identify. Crossing the border is an international offence. To save the fisherman from this problem the proposed system is designed. This will monitor the fisherman's location and the device will alert the fisherman at borders. And if they are taking risk to cross border device will control the engine to protect fisherman from border crossing.

II. EXISTING SYSTEM

In present there are more devices, applications, android apps are available to identify the exact location for the fisherman by using GPS, Radar based system, and even they can control the engine. But this type of system may not be possible due to high cost, time efficiency etc.[1] The proposed system uses various techniques to provide security to the fisherman and the device will overcome all the defects in the existing system.

III. PROPOSED SYSTEM

The fisherman in India are crossing border to srilanka has been increased. Hence a novel method has been proposed that mainly focuses to stop the fisherman from border crossing. The trawler ocean care system uses hardware device to monitor, alert, and control the engine to stop the fisherman from border crossing. The hardware components are microcontroller, buzzer, GPS (Global Positioning System), and dedicated battery. These components are packed as a Device, and for boat engine we use DC motor with DC motor driver.

A. Hardware components

A brief explanation about each hardware components is explained under this hardware components subsection.

1. GPS

The GPS is used to find the location of the fisherman. When the trawler ocean care is activated the GPS starts getting latitude and longitude from satellite and transfers it to micro controller.

Fig. 1. GPS in Trawler Ocean Care Device

2. Micro controller

All the components are attached with this controller it acts as a processor and also, the programs and its execution is done in this controller. And according to the program it works.

Fig. 2: Arduino used in Trawler Ocean Care Device

3. Battery

We use 12 volts lead acid battery to complete trawler ocean care device, and also it is rechargeable. It provides power for the device and charge from engine circuit.

Fig. 3: Battery used in Trawler Ocean Care Device

4. Buzzer

The Buzzer is used to alert the fisherman when they are in border, it will be activated by the micro controller.

Fig. 4: Buzzer used in Trawler Ocean Care Device

5. Engine side

We use the DC motor driver and dc motor for simulating the boat engines.

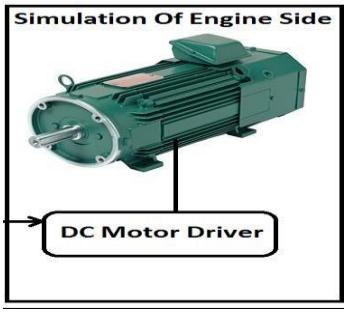

Fig. 5: Engine simulation in Trawler Ocean Care Device

B. Experimental setup

The detailed design of the proposed work is completely explained in the architectural design.

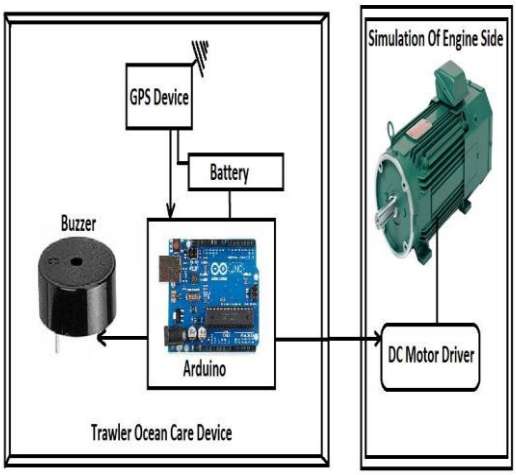

Fig. 5: Architecture of Trawler Ocean Care system

The overall architectural design of the trawler ocean system demonstrates the combination of layout components, Arduino, GPS, battery, buzzer, and dc motor. When the device is started the GPS gets the latitude and longitude from the satellite and transfers the value to Arduino. Arduino will receive the data and compare with reference data already stored in Arduino. When the data's are matched the Arduino activates the buzzer to intimate the fisherman that they are on border. If the fisherman is alerted and returns back the device stops buzzing else Arduino will slow down the engine for pre-defined time. if the fisherman comes back from the border then the device will stop else after a pre-defined time controller will stop the engine for a pre-defined amount of time, This process will continue till the fisherman gets back to the Indian border. So the proposed system will alert and also avoid the fisherman to cross international borders.

C. Flow of working principle

- Start the initialization, when the boat starts the device is also started and the ports are connected.
- Get data from the GPS the values of latitude and longitude will be sent to controller to be compared with the stored data.
- 1If the data matches will be issued first level warning else returned to initial state.
- Delay for two minutes
- After the delay if fisherman comes back from border it will go to initial stage else slow down the engine speed by delaying it for two minutes.
- After delay again checks the location if returned process goes to initial stage else stops the engine for two minutes and continues the process until return to Indian border.

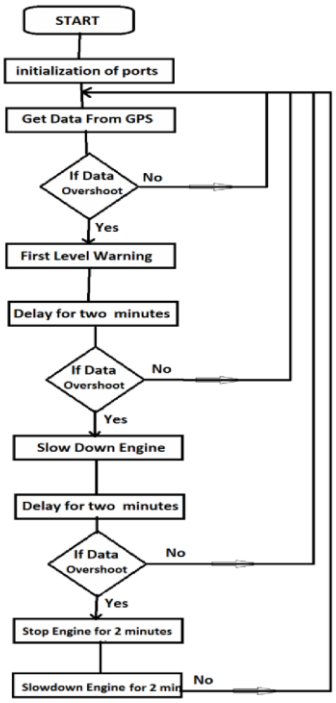

Fig. 6: Flow diagram of Trawler Ocean Care system

CONCLUSION

The proposed system will be a compact device which can be used by the fisherman to avoid border crossing. The proposed system will alert and monitor the fisher-man, it not only alerts but also it will not allow the fisher-man to cross the border. If the fisherman wants to cross the border he will be stopped, where the proposed system helps in controlling the Engine to slow down and also the engine gets stopped for a pre-define so that border crossing will be avoided.

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