

Maritime Border Tracking Alert System for Fishermen

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Abstract- Nowadays we hear a lot about our Indian fishermen being caught by the Pakistani or the Sri-Lankan navy and being tortured. In many cases they even get killed. It also poses a serious threat to the national integrity. Thus the livelihood of the fishermen is very miserable, that they cross the borders unknowingly. The maritime borders are not identifiable easily. Thus, we have made a system that alerts the fishermen about the borders using the GPS and GSM module.

Keywords- GPS, GSM, Latitude, longitude

I. INTRODUCTION

The people's livelihood in coastal areas purely depend on fishing occupation from the sea. Crossing the border is always being treated as a serious offence due to its outcomes. Without the awareness about the boundary limit, the fisherman used to cross the maritime borders. Once they cross the border, they get arrested or killed by the foreign navy or they get abducted and their boats are captured by the neighborhood country's coastal guards. Under such situation the fishermen continued to be in danger. It is one of the major reasons for loss in humans as well as our country's economy. To eliminate such difficulties, a system has been developed which helps the fishermen to be aware of crossing the border line.

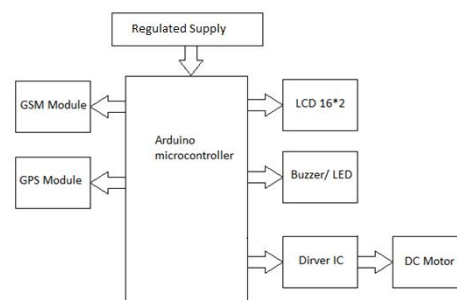
Using a Global Positioning system (GPS) provides a wide range of navigation and timing services. It can be used for border security, tracking of boats and ships in the oceans. This paper serves as a for these people where a GPS system is attached to the boat which in turn is connected to an alarm device. The GPS receives the geographic location of the fishermen in the sea and then triggers a buzzer if the border of the country is crossed by the boat. Geographic location of a country's border can be obtained with the information of the latitude and longitude of the boat. The borders of each country are defined in two levels

II. LITERATURE SURVEY

The Tamil Nadu fishermen even today invoke the historical rights and routinely stay into the International

Maritime Boundary Line (IMBL) for fishing. From Tamil Nadu about 18,000 boats of different kinds conduct fishing along the India-Sri Lanka maritime border. But by accidentally crossing the border without knowledge, they get shot by the Lankan navy. This leads to loss in the both humans as well as their economic incomes.

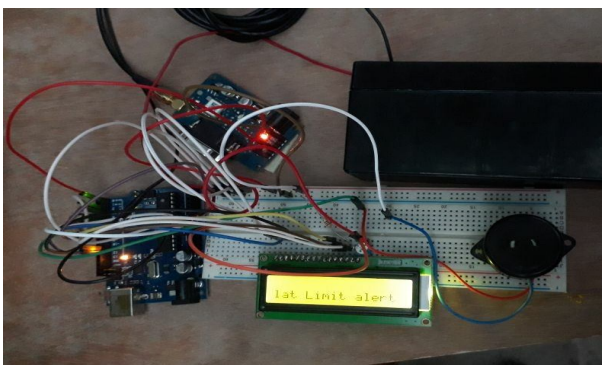
III. BLOCK DIAGRAM



IV. WORKING PRINCIPAL

The GPS module will continuously give the signal which determines the latitude and longitude and indicates the position of the fishermen. This data is provided to the microcontroller, then it gives the output which gets read and displayed in the lcd. The data is then simultaneously sent to the sea border security. An EEPROM is used to store the data, received by GPS receiver. The hardware which interfaces with microcontroller are LCD display, GSM modem and GPS receiver. GPS (global positioning system) is now-a-days being used for a wide range of applications. It provides reliable positioning, and timing services to worldwide users on a continuous basis in all weather, day and night and anywhere. 28 satellites inclined at 55° to the equator orbit the earth every 11 hours and 58minutes at a height of 20,180 km on 6 different orbital lanes and each one of these satellites has up to four atomic clocks on board. By comparing the arrival time of the satellite signal with the onboard clock time, at which the signal was emitted, the latitude and longitudinal degree of the boat's location is determined. The current design is an embedded application, which will continuously monitor a moving boat and once the boat goes beyond the level of the

defined layer the particular operation will be done. for doing so an ARDUINO UNO3 microcontroller is interfaced serially to a gsm modem and gps receiver.



V. FUTURE SCOPE

- We can increase the accuracy up to 2m by increasing the cost of the GPS receiver.
- We can improve transmission and reception efficiency by using satellite phone.

VI. CONCLUSION

Thus the fishermen can easily identify the national sea borders and therefore prevents them from entering their area. The system provides high accuracy and high precision values of the Latitude and Longitude. This model proves to challenge the already existing model which just uses a GPS.

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