

Automatic Control of Fishermen Boat While Boundary Crossing

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ABSTRACT: Nowadays, all the fishermen facing a huge problem at border by Aliens. It is mainly due to boundary crossing, this is due to lack of knowledge in positioning system. This paper comes to give reliable solution for Indian fishermen from dangerous situation and save their life and improve the safety of fishermen. The application uses the information through GPS and GSM MODULE. On the whole it's an attempt to build a suitable device for fishermen at low cost. The main aim is to give well understandable user friendly environment for Indian fishermen to handle hazardous situation.

1. INTRODUCTION

Today Indian fishermen getting threaten by foreign navy and sea pirates due to unknown of border. Thus the fishermen families suffer and struggle a lot of their safety in foreign country. To avoid this problem this project takes in hand with some modern technologies like GPS and GSM module. We use this technology in our project to get integrated and lead the fishermen ship to have a safe journey.

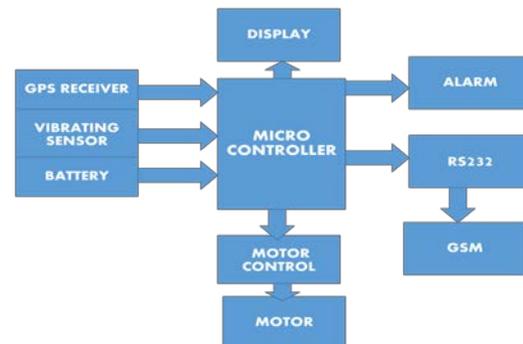
2. EXISTING SYSTEM

At present, there are few existing systems which help to identify the current position of the boats/ships using GPS system and view them in an electronic map. GPS provides the fastest and most accurate method for mariners to navigate, measure speed, and determine location. This enables increased levels of safety and efficiency for mariners worldwide and accurate position, speed and heading are needed to ensure the vessel reach its destination safely. The accurate position information becomes even more critical as the vessel departs from or arrives in port.

3. PROPOSED SYSTEM

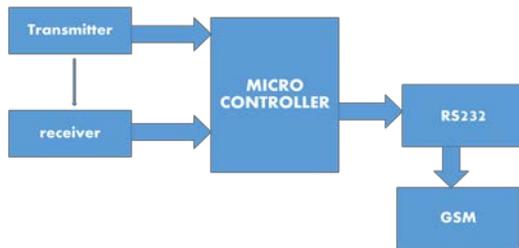
Our proposed system has the main aim to give a well understandable user friendly technology. By using this GPS system when boat crosses the border it cuts off fuel. And similarly by using GSM module, send an SMS to base station or family when the ship crosses the border. In case the aliens start to attack the fishermen boat, SMS will send to base station. Alarm and LED display connected to the boat to alert the boundary crossing. Moreover the transmitter and receiver are used in our project, if the signal connection between those devices stopped; SMS will send to base station.

4. BLOCK DIAGRAM



In our project, microcontroller plays a major role. The main aim of our project is to avoid the navigation of boat towards the boundary. It can be avoided by automatic control of fishermen boat by using GPS system. Similarly, we added some additional features. Sometimes other country force starts to attack while fishing, in that time they starts to attack. For this case, we using vibrating sensor to indicate the attacking problem. If they start to attack,

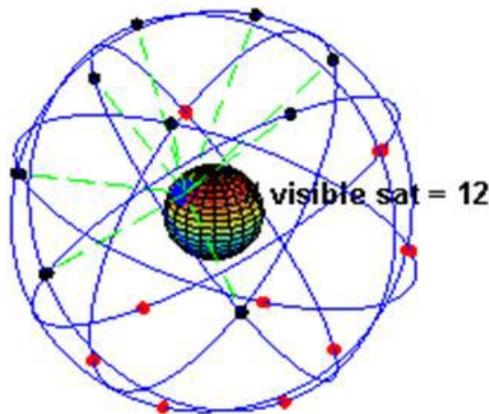
vibrating sensor gives signal to microcontroller then it send message to base station through GSM MODULE. We know that GSM is used for message transfer. For indicating the boundary for fishermen, alarm and LCD are used .similarly if our fishermen try to move towards the boundary, SMS will send to our Indian force or by the respective families.



Here we are using transmitter and receiver. Transmitter is made like hand band, it often gives signal to receiver. When the signal brakes, it gives signal to microcontroller then it send a SMS to base station through GSM. If our fishermen caught by alien force, they move over a distance towards boundary. In that case the process starts to work.

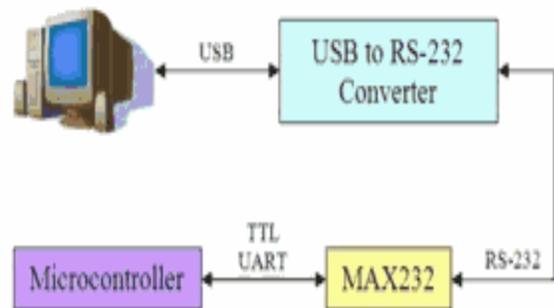
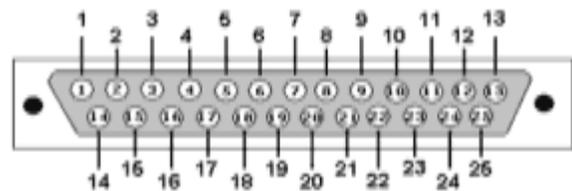
5. REQUIRED TOOLS

GLOBAL POSITION SYSTEM (GPS) –It is a space based satellite navigation system that provides location and time information in all weather conditions, anywhere on or near the earth where there is an unobstructed line of sight to four or more GPS satellites. The system provides critical capabilities to military, civil, commercial users around the world .it are maintained by United States government.



GLOBAL SYSTEM FOR MOBILE COMMUNICATION (GSM) – Developed as a replacement for first generation analog cellular networks, the GSM standard originally described a digital circuit switched network optimized for full duplex voice telephony .it is made for data transmission and now it is developed to fourth generation (4G).

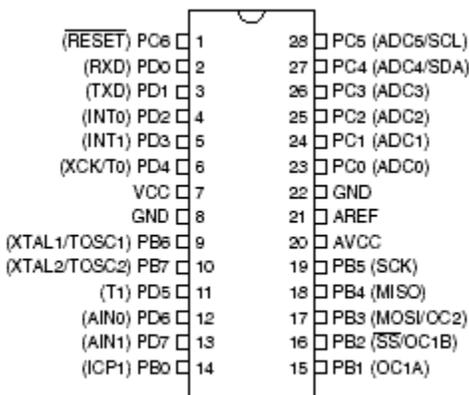
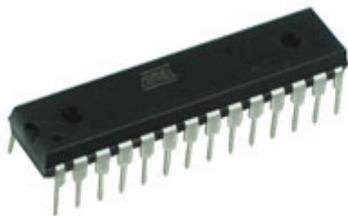
MAX232- It is dual driver or receiver. it is used to convert the TTL / CMOS logic to RS232 logic level. Most system designed do not operate using RS232 voltage levels. Since this is the case, level conversion is necessary to implementRS232 communication. Level conversion is performed by special RS232.these IC typically have line drives that generate the voltages levels required by RS232 and line receivers that voltage level required by RS232 and line receiver that can receives RS232 voltage level without being damaged.



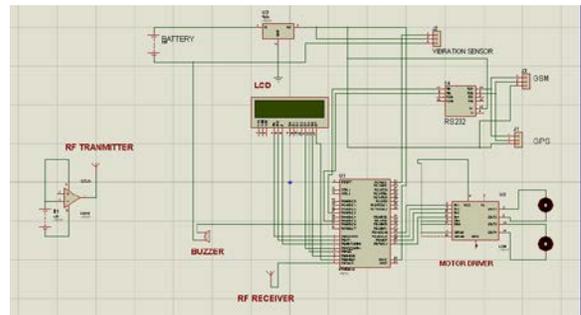
LCD- It consists of two glass plates each coated with tin oxide, inside with transparent electrodes separated by a liquid crystal. Operating voltage is 3-20v and it consumes less power. it is less cost.



- ATMEGA 8 MICROCONTROLLER-** The device is manufactured by using ATMEL's high density non-volatile memory technology. It consists of inbuilt ADC and has high performance. It is mostly used for embedded system projects. It has maximum clock frequency than 8051. It has separate 3 PWM. Operating voltage for this microcontroller is 4.5-5.5 v. It provides the following features: 8kbytes of in-system programmable flash with read-while-write capabilities, 512 bytes of EEPROM. The controller has peripheral features like inbuilt ADC, required to get the signals from the sensors.



6. SCHEMATIC CIRCUIT DIAGRAM

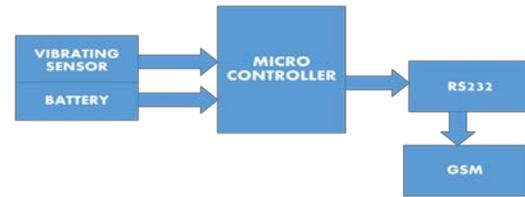
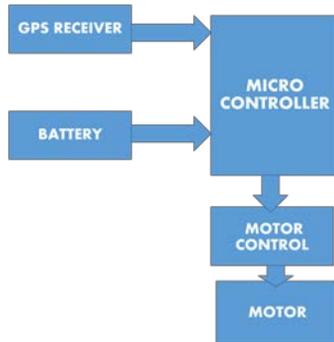


The above circuit diagram is made by proteus software. It is a virtual system modeling and circuit simulation application. The suite combines mixed mode SPICE circuit simulation, animated components and microprocessor models to facilitate co-simulation of complete microcontroller based designs. Transmitter and receiver circuit are separately given in the above figure. Transmitter is made like a hand band. Receiver is connected to microcontroller. There are 6 processes given in our project. All the process components are given in the above circuit diagram. Components are ATMEGA 8 microcontroller, motor controller (driver circuit), motor, vibrating sensor, GPS, GSM MODULE, LCD, transmitter and receiver. GPS and GSM module is connected to RS232. Series connector is directly connected to microcontroller. Motor driver, LCD, vibrating sensor connected to microcontroller.

7. WORKING

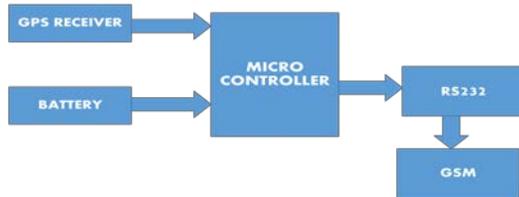
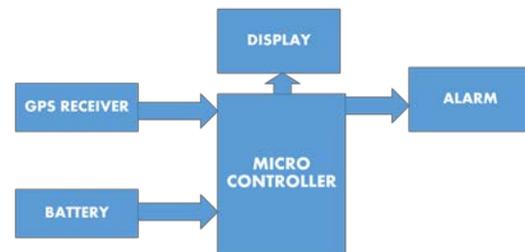
After downloading and installing the required development tools, the project starts to work. The margin latitude and longitude value is gets initialized. GPS system is used to find the location. When the boat starts to move towards the boundary, it identifies the latitude and longitude values and it compared with predefined values.

When the boat reaches its certain values, the fuel flow to engine gets stopped and the motor became off. Hence the boat navigation gets avoided.



Similarly alarm circuit and LED display is provided for notifying the hazardous condition.

In case the fishermen try to move towards the boundary, SMS will send to the base station or family through GSM.



If the alien force try to attack the Indian boat, vibrating sensor gives the signal to microcontroller and it send an SMS to Indian force through GSM.

Moreover, the transmitter and receiver are used. Transmitter is made like a hand band and receiver is connected to microcontroller. There is a continuous signal between transmitter and receiver. If the signal cuts, ALERTING SMS will send to family or base station.

8.CONCLUSION

Nowadays the fishermen problem became a national issues between Indian and neighbour countries. There is a boarder between India and other countries. Firstly data should be initialized in kit .after initialization, when the boat moves towards the boundary boat will stopped. It is the main aim in our project. Message sending facility also gives a good communication between fishermen and family or Indian force. This project helps to avoid several problems. By using this project, each and every fisherman has individual safety and also having a safe journey. It gives the maximum level of safety.



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